The Hunterian Oration:

AN ADDRESS ON CRANIOLOGY.

Delivered in the Theatre of the Royal College of Surgeons of England on Feb. 14th, 1901,

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[MR. MACNAMARA referred to the death of our beloved Queen and to the interest which she had always taken in the efforts made by the medical profession to alleviate human suffering. He then observed that in this time of universal mourning we were consoled by knowing that our King had, by his never-failing courtesy and attention to the numerous demands of his people, already gained their affection. His Majesty had on several occasions evinced his personal interest in the Royal College of Surgeons of England, and it was the sincere hope of that body that he might still find time to help on the beneficent work of the fund which he had established with the object of placing our metropolitan hospitals in a satisfactory financial position. Reference was then made to the loss which the College had sustained since the last oration was delivered in the death of Sir James Paget. Mr. Macnamara proceeded:]

GENTLEMEN,—We have assembled here to-day in order that we may commemorate the merits of John Hunter and such other persons whose labours have contributed to the extension of our knowledge in comparative anatomy, physiology, or surgery. Hunter's life in all its various aspects has been so frequently dwelt on in former orations delivered in this theatre that it is beyond my power to throw any fresh light on this subject. His fame is attributable to his having possessed an intense love of science, indomitable energy, and a self-reliant, manly character. If we turn to his portrait hanging on the walls of this theatre it would seem that at the time when this likeness was painted Hunter was engaged in the study of the craniology of man and anthropoid apes, for on the table before him there is an open volume and on its pages we see clearly drawn a human skull and the skull of a chimpanzee. Hunter is portrayed, pen in hand, in deep thought, having just turned away from the book he had been studying, and though his notes on comparative anatomy were unfortunately destroyed with his other manuscripts we can hardly doubt that craniology was a subject in which he was deeply interested or it would not have held so prominent a position in this famous picture. It would, therefore, seem that on an occasion such as the present we can do no higher honour to Hunter's memory and to that of some of the able men of science who have followed him than by endeavouring to give in as few words as possible a *résumé* of their labours, with especial reference to the subject of craniology and the light it is capable of throwing on the prehistoric inhabitants of western Europe and of the evolution of the race of men to which we belong. One of the most brilliant and original thinkers who has occupied the presidential chair of this College, Sir William Lawrence, in his ever-memorable lectures on the Natural History of Man delivered in this College in the year 1819, from his researches in comparative anatomy, foreshadowed the idea that man and apes were derived from common ancestors. Lawrence's opinions were received with a storm of adverse criticism. Mr. Abernethy, for instance, charged him with "propagating opinions detrimental to society and endeavouring to enforce them for the purpose of loosening those restraints on which the welfare of mankind depend." Time, however, has proved that Lawrence was right, and in the course of lectures delivered in this theatre in February, 1899, Professor Keith, from a careful analysis of the maximum number of anatomical characters common to man and apes, arrived at the conclusion that they are derived from an identical or a kindred stock. While admitting without reserve that man and apes are structurally almost identical, nevertheless, as pointed out by Professor Huxley in the year 1863, they differ very materially as regards the relative weight of their brains. The carcass of a full-grown gorilla is heavier than that of an average-sized European, but it is doubtful whether a healthy adult European's brain ever weighed less than 32 ounces or the brain of the heaviest gorilla ever exceeded 20 ounces in weight.[1] Although at the present time there is this marked relative difference between the weight of the brain and the form of the skulls of Europeans and apes this was not always the case, for the calvaria of the earliest discovered human beings were in form not very far removed from those of contemporary anthropoid apes. This fact leads us to inquire into the nature of the conditions which have led to the increased capacity of the human cranium and to the vast superiority of man's intellectual endowments over those of all the other primates. If we turn to Hunter's preparations in our museum[2] we find among them some remarkable specimens which he describes as "compressed," "unsymmetrical" human crania which he believed were the result of premature consolidation of one or more of the sutures of the skull.[3] Since Hunter's day various authorities have devoted much time to the subject of the abnormal closure of the cranial sutures in man: prominent among them are the names of the chief of England's craniologists, Dr. Thurnam, and Dr. Barnard Davis—the splendid collection of prehistoric and other skulls made by the latter gentleman are now in the possession of our College. From evidence of this nature we have come to learn that the size and form of the skull depends to a large extent on the growth of the bones of which it is formed along the lines of the various cranial sutures.

It is well known that the frontal bone, which forms the vault of the anterior part of the cranium in the young of man and apes, is divided by a suture, and so long as this line of growth, together with the coronal and other sutures by which the frontal is separated from surrounding bones, remains open, the fore part of the skull and with it the anterior fossæ which it encloses can expand. But if the frontal and the other anterior sutures of the cranium consolidate early in life the fore part of the skull cannot increase in capacity beyond the size it had reached in infancy. Professor Deneker[4] in his work on the embryology and development of anthropoid apes has shown that in consequence of the early closure of the anterior sutures of the skull of these animals the fore part of their brain does not increase beyond the size it had attained at the end of the first year of life, but in man these sutures do not consolidate until a much later period, so that the anterior lobes of his brain are enabled to, and actually do, become far more perfectly developed than the corresponding lobes among apes; men of the same bulk have four times as much superficial brain surface as anthropoid apes.[5]

Whatever other functions the anterior lobes of the brain perform, their cortical nerve elements in conjunction with those of the other lobes of the brain control, to a large extent, our higher intellectual faculties. If we study the collection of preparations of the brains of apes in our museum, it seems to me we shall arrive at a similar conclusion to that expressed by Professor Edinger, which is, that the gyri of the brain of man and of the anthropoid apes are similar in character, with the marked exception of those convolutions which enter into the formation of the frontal lobes. The superior and the middle gyri of these lobes in anthropoid apes are always much shorter than they are in

[1] Man's Place in Nature, by Professor T. Huxley, p. 103.

[2] College Catalogue, Nos. 135, 137, and 139.

[3] Professor Virchow who has given much attention to this subject lays down the following law: "In the too early ossification of a suture of the skull the development of the cranium is arrested in the diameter perpendicular to that centre."

[4] Archives de Zoologie Expérimentale et Générale, tome troisième, année 1885.

[5] Among anthropoid apes in consequence of the great size of their frontal sinuses and the roofs of the orbits rising more obliquely into the cranial cavity, the anterior and the inferior walls of the anterior fossæ of their skulls intrude upon and lessen the capacity of this space, and therefore of the anterior lobes of the brain which are contained in these fossæ. Virchow states that "of all parts of the ape's head it is the brain that grows least," even "the largest ape keeps its baby brain." Although we have not sufficient data to fix the absolute duration of the life of anthropoid apes, it is doubtful if they, as a rule, attain the age at which man arrives at his full growth. It is, however, certain that the largest apes are perfectly developed when man is still in his youth, and that the ape's brain has reached perfection before the period of shedding its teeth, while in man it then takes its real first step to perfection. The Cranial Affinities of Man and Apes, by Professor R. Virchow, p. 26. Also Journal of Anatomy and Physiology, New Series, vol. xiii., p. 275.

the brains of average Europeans, and what is of especial importance is, that in the brains of anthropoid apes the inferior frontal gyri only exist in a rudimentary condition of development; this deficiency is very marked with respect to that area of the left inferior gyrus which contains the nerve elements which control our faculty of articulate language. It seems probable that the rudimentary condition of this gyrus in apes is therefore the anatomical expression of the inferiority of these animals to man in intelligence; our intellectual development depending on our possessing the faculty of speech.[6] It may be, anthropoid apes having only rudimentary, if any, specialised nerve centre of speech, that the other parts of their anterior lobes have remained in a comparatively undeveloped condition; whereas the left inferior frontal lobe of man's brain having become highly specialised and with it his power of language, the other convolutions of his anterior lobes, which govern his intellectual faculties, have been stimulated to increased action, and in this way the characteristic expansion of the fore-brain has been evolved among all the more highly civilised races of the human family. But our contention is that the factors which govern the growth of the skull differ from those which develop the brain, and that the imperfect evolution of the frontal lobes among anthropoid apes is to a large extent due to the premature ossification of that part of the skull which encloses the fore-brain. However this may be, the possession of fully-developed anterior lobes of the brain, especially of its left inferior gyrus, is the distinctive character of the central nervous system of all those families of mankind who possess well-developed intellectual capacities. On the other hand, if we compare the skull of an Englishman with that of one of the natives of Australia we see what a wide difference there is between the development of their frontal regions, and also as to the nature of the sutures of many of their skulls.[7] We shall further discover from specimens in our museum that the inhabitants of western Europe in the later tertiary and early quaternary period, as regards the ossification and form, especially of the frontal region of their skulls, more closely resembled that of the chimpanzee than the race of men now inhabiting Europe.[8]

Since Hunter's and Lawrence's time considerable progress has been made in the science of geology and anthropology. Nevertheless, in our search for knowledge concerning the origin and development of pre-historic man in western Europe we are still hampered by the limited supply of his remains. It could hardly have been otherwise considering the perishable nature of the human skeleton and the vast length of time, and the great geological changes which have occurred since man appeared in our part of the world. But we have additional evidence concerning the prehistoric inhabitants of this part of Europe, for they have left us some of their imperishable handiwork in the shape of flint and stone implements, which during the past century have been carefully studied in relation to the geological strata in which they were discovered, by Lord Avebury, Professor Boyd Dawkins, Professor Prestwich, Sir John Evans, the late Sir William Flower,[9] together with many other English and foreign anthropologists. From the form and workmanship of these stone implements we are now able to classify, and assign them to the various periods in which they were manufactured by the early inhabitants of our part of the world.

Up to within recent times it was held that no human beings existed on the earth before the quaternary geological epoch, but in the year 1867 the Abbé Burgeois exhibited a collection of chipped flint weapons which he had discovered in a previously undisturbed tertiary formation; it was not, however, until 1872 that these instruments were admitted to have been made by man or some other animal living previously to the commencement of the quaternary period. Precisely similar flint weapons have since been discovered in tertiary strata in various localities in Europe and in Asia. In the year 1894 Dr. Eugene Dubois found the upper part of a skull (calvaria) in close proximity to a femur and two molar teeth in a well-defined tertiary geological formation in the island of Java. Dr. Dubois was employed by the Dutch Government to examine and report on the fossil-bearing strata of Java, and while engaged on this work he discovered imbedded in a hard mass of tertiary tuffs the bones above referred to; he brought these fossils to Europe and submitted them for examination to the leading anatomists of this and other countries. They concurred in the opinion that the femur was a human bone belonging to a man of a very low type; "and demonstrating the fact that while rendering its possessor capable of the bipedal mode of locomotion he still retained some vestiges of adaptation to an arboreal existence."[10] There was a difference of opinion concerning the calvaria, for it was calculated that the capacity of this skull did not exceed 850 cubic centimetres, the capacity of the largest cranium of anthropoid apes being 600 cubic centimetres. Until the Java skull was found the earliest known human skulls had a cranial capacity of about 1220 cubic centimetres. After an exhaustive analysis of the anatomical characters of the Java calvaria as compared with the skulls of man and apes Professor Schwalbe has arrived at the conclusion that the Java skull, taking its capacity and form into consideration, "is on the border-line between that of man and anthropoid apes"; it is more closely allied to the skulls of the Neanderthal group of men than it is to the crania of the higher apes, but it is much nearer in form to the skulls of the chimpanzee than it is to the cranium of the average adult European of the present day. Nevertheless, from a study of the impressions of the convolutions of the brain on the interior of this calvaria it is shown that the inferior frontal convolutions are well marked and approach in form those of man; and although the superficies of this convolution is less than half that of the men of the present day it is double that of the largest brain of any known anthropoid ape.[11] This fact suggests that the Java man possessed in some slight degree the faculty of speech and that his intellectual capacity was higher than that of any of the anthropoid apes. The post-orbital index or narrowing of the Java skull is 19·3, as compared with the average of living Europeans, which is 12. In this measurement the Java skull comes nearer to the Neanderthal group than to that of anthropoid apes.

[6] The Anatomy of the Central Nervous System of Man, Professor Ludwig Edinger, M.D., translated from the fifth German edition by Professor W. S. Hall, 1899, p. 194. Professor D. J. Cunningham states that "one of the most remarkable characters of the cerebrum of the chimpanzee and orang is the total absence of the frontal and orbital opercula," or the pars triangularis which contains Broca's nerve-centre for articulate language. See Contributions to the Surface Anatomy of the Cerebral Hemisphere, by Professor D. J. Cunningham, Dublin, 1892, p. 110.

[7] Professor Huxley held that the organisation of the human brain had more to do with man's intellectual superiority than either its weight or size, and there can be no question that men having small heads are by no means necessarily wanting in mental capacity. But a well-developed frontal region is a characteristic feature of all the more highly civilised communities of the world, and among such people low intellectual endowments or even idiocy is found to be comparatively frequent in those with abnormally small frontal lobes. We agree fully with Professor Huxley that among all the known races of human beings the brain and its including case, the skull, grow together, and the former does not exercise an absolutely predominating influence over the development of the latter. But it is certain that if the anterior part of the skull becomes a shut box early in life it must control the subsequent size and development of the brain which it contains. Professor Welcker, who studied this subject in a thorough Teutonic spirit, arrived at the conclusion that in European races the frontal suture remains open up to the adult period of life in one out of nine persons. Among African races it is not found open at the adult period of life in more than one in 150 persons; and among the aborigines of Australia no adult skull has yet been observed with an open frontal suture. The well-known French anatomist, Gratiolet, states as a result of his researches that "not only the growth of the brain ceases sooner in those races in which the sutures close early, but also that there is a difference between the higher and lower races as to the order in which the sutures are closed normally. In the latter the anterior sutures consolidate before the posterior, and in the higher races it is the reverse, the posterior sutures close earlier than the anterior." M. Gratiolet bases an argument for the greater perfectibility of the higher races upon these facts. On the other hand, Professor L. Edinger is disposed to agree with Professor Peris that not a few men of pre-eminent intellectual power have in early life been affected with slight hydrocephalus which, having abnormally expanded their skulls, has then receded. The brain of such young people has been able to attain a greater capacity than it would have acquired had there been no hydrocephalus to expand the skull-cap. The Anatomy of the Central Nervous System of Man, by L. Edinger, M.D.; translated from the fifth German edition by Professor W. S. Hall.

[8] The Origin and Character of the British People, by N. C. Macnamara, p. 25.

[9] Sir William Henry Flower, K.C.B., F.R.S., died on July 1st, 1899; he was for some years the Conservator of the Museum of the Royal College of Surgeons of England, and the Council of the College unanimously passed the following resolution at their meeting on July 13th, 1899: "The Council hereby express their deep regret at the death of Sir William Henry Flower, K.C.B., F.R.S., and their sincere sympathy with Lady Flower and the members of his family. The Council remember how much Sir William Flower, while conservator, did to advance the utility and reputation of the museum by the skilful discharge of his duties and by the eminent position which he won for himself among men of science, and they hereby record their grateful appreciation of his services to the College."

[10] The Journal of Anatomy and Physiology, vol. xxxiii. New series, vol. xiii., p. 273.

[11] The Brain-cast of Pithecanthropus Erectus, by Eug. Dubois, Journal of Anatomy and Physiology, New Series, vol. xiii.

In the employing of skulls, which we believe to be the most reliable test of human races, we classify them under three heads according to the measurements of their cranial indices. In other words, the measurement of the greatest breadth of the cranium, expressed in percentage of its greatest length, is our guide as to the race to which an individual belongs from a craniological point of view. When the cranial index rises above 80 the head is called "brachycephalic," a broad head; when it falls below 75 the term "dolichocephalic" or long head is applied to it. Indices between 75 and 80 are characterised as "mesocephalic," intermediate heads.[12]

We have in our museum casts of two crania, and other bones, forming part of human skeletons which were found resting on a ridge of calcareous rock overlooking the river Orneau in the commune of Spy, Belgium. These remains were unearthed with great care and there is every reason to believe that they were originally deposited where they were discovered, being covered over with four well-defined beds of débris and clay, in which were found the bones of the rhinoceros and the mammoth, also flint weapons of the Mousterian epoch.[13] One of these skulls has marked palæolithic[14] characters, its brow ridges, like those of the higher apes and the Java skull, are prominent and the forehead indicates the low type of human being of which this cranium formed a part. Its form, like that of all the other human inhabitants of Europe as yet discovered in the early geological strata of the quarternary (pre-glacial or inter-glacial) period, is of the long type, its sutures are simple and for the chief part are consolidated. We have another cast, presented to our museum by Professor Huxley, one of our most talented and earnest workers in the science of anthropology, taken from the Neanderthal cranium. This cranium was found with other portions of a human skeleton in a limestone cave near Dusseldorf. This cave was raised some 60 feet above the existing bed of the river Dussel and its floor was covered to a depth of five feet by fluviatile deposits beneath which these human remains were discovered. We have in our collection a skull of the characteristic palæolithic type, presented to the College by one of our former Presidents whose memory is treasured by all who knew him, Professor George Busk; it was found in a layer of brecciated talus under the north front of the Rock of Gibraltar. We have also a cast of the calvaria of one of this race found in county Sligo. Another skull of the same type was discovered at Bury St. Edmunds, with the remains of extinct animals and Mousterian flint weapons.[15]

The anterior surface of the lower jaw among the existing races of Europe projects to form the chin. Among apes the reverse is the case, for the anterior surface of their mandibles recede. The Marlarnaud and the Naulette mandibles, of which we have casts, are evidently those of human beings; they were found in geological formations (which also contained the bones of extinct species of animals and palæolithic flint weapons). These bones are distinctly ape-like in character, having receding anterior surfaces, and also the sockets of all the molars are equal in size. The bones of the legs of these pre-glacial or intra-glacial inhabitants of Europe are of ape-like form, and together with the bones of their arms prove that they were a short powerful race of beings whose average stature did not exceed five feet. They are known as the Neanderthal group of men.

When the glaciers which had extended over the greater part of Europe moved northward the reindeer passed away with them from our part of the continent. These animals, which could easily be captured by man, had roamed in vast herds over the surface of the country and had probably afforded the human inhabitants of that period living in western Europe an ample supply of food. The climate of our part of the world at the termination of the glacial period became such as we now experience. Britain was separated from France by sea, and fine rivers, containing numerous fish, filled the valleys of our land; the red deer, wild horse, and various fleet-footed animals abounded in the splendid forests which overspread the country. But these animals and the fish of our lakes and rivers were not easily captured, and the human inhabitants of western Europe were therefore compelled to exert their intellectual capacities to an extent not heretofore necessary in order to supply themselves with food and with the skins of animals for clothing. Man was able to overcome the difficulties he had to face, possessing an innate power by means of which (as already explained) his brain was able to develop and so meet the increased demand made upon it in the struggle for existence. That such was the case we judge from the discovery in geological formations of the post-glacial period of the skulls of men having the same physical type as those of the strictly palæolithic epoch of western Europe, but with increased brain capacity. These post-glacial human skulls indicate, in my opinion, a gradual transition in form from the ape-like characters of the previous period to a higher standard and distinctly greater brain capacity in the frontal region; this most important question, however, requires further study. With this improvement in the form of the human skull, the flint, stone, bone, and horn instruments made by the post-glacial inhabitants of western Europe become more highly finished, indicating the possession of increasing intellectual power on the part of those who made them.

The Engis skull, of which we have a cast, presented to this College by Sir Charles Lyell, is a well-known example of a human cranium of the early neolithic[16] or post-glacial period. Huxley, in his description of this skull, observes: "It takes us, at least, to the further side of the biological limit which separates the present geological epoch from that which preceded it," that is, from palæolithic times.[17] The Borris and Egisheim skulls probably belong to this period, their characters being similar to those of the Tilbury cranium described by Sir Richard Owen, of which we have casts in our museum. These and various other skulls found in geological formations of the time referred to are all of the same type and lead us to believe that the inhabitants of Europe consisted, in the early neolithic period, of only one race, the descendants of the human beings who inhabited our part of the world during the previous or early palæolithic epoch. They had long (dolichocephalic) skulls, with slightly projecting supra-orbital ridges, well-formed noses, and a fairly-developed frontal region as compared with the far more ancient Java and Neanderthal crania. Their lower jaws and the bones of their legs were less simian in character than those of their remote progenitors; they were a small race of beings. We find no metal weapons or instruments with their remains and we therefore conclude that they were ignorant of the use either of bronze or of iron, nor do they seem to have possessed domestic animals or to have had any knowledge of agriculture. This race of primitive inhabitants of western Europe are best known as the Iberians, and we may conveniently employ this term so long as it is understood to designate the Africo-European stock who were, so far as we know, the only human inhabitants of Europe in the later palæolithic times. It should be clearly understood that no *bonâ-fide* human remains belonging to the early palæolithic period have hitherto been discovered in western Europe which were not of the same type as those above described.

As we pass from the early to the mid-neolithic epoch, we

[12] Assuming the length of the cranium to be 100 the width is expressed as a fraction of it, and is known in the living subject as being the cephalic, and in the bare skull as the cranial index. For instance, if the greatest breadth of a skull is 15·2 centimetres and its length is 19 millimetres we multiply the breadth in this case 15·2 by 100 and divide the product by its length, 19 centimetres, which gives us the cephalic index 80.

[13] The most superficial layer was 9·5 metres thick and was formed by débris which had fallen from the rock above. The second layer was three metres thick and formed of yellow argillaceous tuffs. The third layer was six metres thick, consisting of red clay in which were numerous Mousterian flints and the tusk of a mammoth. The fourth was yellow calcareous clay, immediately beneath which the human remains with bones of extinct animals were found.

[14] The term "palæolithic" is employed to geological formations distinguished by containing the rudest shapes of human stone implements associated with the remains of mammals, some of which are entirely extinct while others have disappeared from the districts where their remains have been found. These deposits may be classed under the heads of alluvium, brick-earth, cavern-beds, calcareous tufas, and loess. Class-book of Geology, Sir A. Geikie, p. 361.

[15] We possess accurate drawings and a description of this cranium. There can be no question that this was a genuine palæolithic skull and demonstrated the presence in the county of Suffolk of this race of human beings when England was still connected by land with France.

[16] The term "neolithic" is used to signify that period in which the stone, bone, and horn implements made by man indicate a considerable advance in the arts of life beyond those discovered in the previous palæolithic epoch. In the neolithic period the remains of the mammoth, rhinoceros, and other prevalent extinct forms of the palæolithic series had almost, if not completely, disappeared from western Europe. The deposits in which neolithic remains are found consist of river gravels, cave floors, peat bogs, raised beaches, &c., &c.

[17] Man's Place in Nature, by Professor Huxley, p. 120. For a description of the Borris skull see S. Laing and Thomas H. Huxley's "Prehistoric Remains of Caithness."

come upon the remains of a race of men who, as regards their physical character and state of civilisation, essentially differ from the people above referred to. The stone implements found with their skeletons are beautifully formed, many of them being highly polished and having sharp cutting edges. A few of the purest bronze axe-heads have been discovered with these remains, and also the bones of domestic animals belonging to species indigenous to Asia but foreign to the palæolithic fauna of Europe. Lastly, we have evidence that these people were acquainted with agriculture and with the manufacture of sun-dried pottery. They paid great respect to their dead chiefs, burying their bodies in natural caves or in tombs formed of huge flagstones placed edgeways side by side with similar stones laid on the upright ones to form the roof of the building. These structures, the well-known long dolmens, have been found, built on precisely the same plan, in Ireland, England, the greater part of Europe,[17] the west of Asia, India, Arabia, and northern Africa. They were not only sepulchres for the dead but many of them also contained an altar, a place of mourning, and of offering, where intercession was made to the spirits of departed chiefs by their relations and tribesmen. The Rodmarton long dolmen or temple tomb (near Cirencester) affords us a good example of one of these structures; it is 180 feet in length and 70 feet broad. We have in our museum a fine human skull which was found in this dolmen, with some well-polished stone implements. If we compare the skull with that of palæolithic man or with the skulls of the early neolithic human inhabitants of western Europe we are immediately struck by the marked difference that exists between them and the Rodmarton skull. Dr. Thurman's unique collection of crania may be seen in the Anatomical Museum, Cambridge; these crania for the most part were unearthed by himself from various English long dolmens and barrows, and they resemble in form, although they are of a higher type than, the skulls found in the caves of Cro-Magnon and Mentone; they are identical in character with skulls found in the long dolmens of France and other countries of Europe. The cranial index, capacity, and other features of the bones of these skulls lead us to assign them all to one and the same race, of which the Cro-Magnon are probably some of the very earliest specimens as yet discovered in western Europe. The three Cro-Magnon and three Mentone skeletons were those of people some six feet four inches and upwards in stature, so that a race of giants in far distant times was no myth. Their cranial capacity was above that of average Europeans of the present day. From their physical conformation and from the remains of the animals found buried with them, which are of Asiatic species, and from other evidence, we are led to the conclusion that the Cro-Magnon race represent the advance guard of the proto-Aryan human family, of which the Rodmarton [18] and many other long dolmen skulls show a more advanced type. These people in far distant ages migrated from the east into western Europe and from thence spread into our islands; southwards they passed into India, Persia and Arabia, Asia Minor and northern Africa. Over this vast area and far away in eastern Asia we find their remains with flint and stone implements of the early neolithic type, buried in long dolmens or barrows. The roots of many of the words used by this ancient people exist in most of the languages now spoken in Europe, and their religious sentiments, myths, and above all their racial mental and physical characters, as portrayed in the Rig-Veda and on the ancient monuments of Egypt, are pronounced features in the existing Teutonic and Anglo-Saxon people. From the form of the crania found in many of these long dolmens we know that this tall, fair, handsome, long-skulled race intermarried with the pre-existing short dark Iberian inhabitants of Europe. The fair tall race probably did not at any time, unless in the north of Europe, form a large proportion of the population; they were a dominating, fighting, and priestly caste who compelled the primitive small, dark (Iberian) inhabitants of western Europe to work as their slaves.

During the neolithic era, while the descendants of the proto-Aryan stock were slowly feeling their way from the East along the valley of the Danube into Europe, a very different race was passing from Northern Asia into the Baltic provinces. These people formed settlements on the islands of Denmark and westward as far as the north of Ireland. They were the first of the broad-skulled races of the human family who had entered Europe. Their skulls were brachycephalic in form with broad faces and noses, the latter being deeply concave at the base. Their remains are found in the islands of Denmark, especially that of Möen, also in Yorkshire and county Antrim, in which localities their descendants may still be recognised by their physical characters. These people belonged to the stone age of Europe, and by comparing their skulls with those of the Rodmarton or Cro-Magnon crania we see the great difference in form of the prehistoric long and the broad-headed races of men. Until the close of the neolithic epoch there were, therefore, three pure races who formed the sole human inhabitants of Europe, with the exception of those who were the outcome of the intermarriage of the people of these three races with one another.

Passing from the neolithic to the succeeding bronze age we find that Europe, including our islands, was overrun by a small, olive-coloured, broad-skulled people having characteristic Mongolian features. These were the lake-dwellers of Switzerland and other parts of Europe. They were traders in bronze, and probably, as Professor G. Mortillet and other authorities hold, they gradually replaced stone, horn, and bone with bronze instruments and weapons, effecting in this way a great revolution in the social and industrial habits of the pre-existing inhabitants of western Europe. In these far distant times deep mining operations were out of the question. Superficial copper ores were abundant in most parts of Europe and Asia, but alluvial tin was extremely scarce on our continent, and it is still only found in large quantities in south-eastern Asia. Cornwall, the Scilly islands, the south of Ireland, and some few other places also contained superficial ores of tin. It seems probable that the Mongolians inhabiting the highlands of south-eastern Tibet long before the commencement of the bronze age in Europe spread into Burma, the Malay Peninsula, and Cochin China, and there acquired the art of mixing copper and tin in such proportions as to form bronze, the weapons and instruments which they manufactured of this metal being a ready and profitable source of barter in Europe.[20] Together with the broad skulls and other remains of these people we find in the débris of the lake dwellings numerous ornaments made of jade, nephrite, and chloromelanite, minerals found in large quantities in south-eastern Asia but not in Europe; and, lastly, vases on which are depicted people in oriental costume and instruments used only by the south-eastern Tibetans have been discovered in connexion with the remains of the lake-dwellers and the round or oval barrows of Europe. These people, as a rule, cremated the bodies of their dead, and numerous cinerary urns containing their remains are found scattered over the Wiltshire and other ranges of hills in the south of England. Some of their skeletons, however, have been discovered in the round barrows which are so numerous in many parts of England, Ireland, and throughout Europe and Asia. With these remains bronze instruments have been found indicating, like the stone implements of palæolithic man, various stages of excellency in workmanship. One of the finest skulls in our museum was taken from a round barrow at Codford, Wilts. The form of this brachycephalic skull, together with its nasal bones and orbits, are characteristic of the southern Mongolian race, well known to us as the Gurkhas, and Burmese of our Indian empire; a lazy, bright, rollicking, fighting people, intensely superstitious and home-loving—"the Irish of the East" as they have been aptly called. In the course of many centuries the Mongolian people of western Europe have become absorbed into the pre-existing Ibero-Aryan population and a cross-breed has resulted, and from this stock the ancient British people of our islands were derived. Their skulls are mesocephalic (a combination of the long and broad skull) and are amply represented in our museum, the cephalic indices being about 78.[21] Subsequently to the bronze age the ancient Britons were well-nigh exterminated in England by Teutonic races who invaded our country from the north of Europe, the Anglo-Saxons taking the place of the pre-existing ancient British population of England

[17] The construction of these dolmens wherever met with is so similar that we conclude they were the work of one race, or at least of one special confederacy of races.

[18] History of Ancient Wiltshire, by Sir H. C. Hoare, vol. i., Plate XVII., p. 164.

[20] These people without doubt made bronze weapons both in the south of England and of Ireland, for clay moulds have been found there in which weapons of the early bronze period in Europe were cast.

[21] The Mongolian cephalic index is from 80 upwards and that of the Ibero-Aryan is 75 and below that figure.

and Scotland. Nevertheless, in some districts of England such as North Bedfordshire, a number of the descendants of the ancient British stock continue to flourish up to the present day, as also in the greater part of South Wales much of Cornwall, and the south and west of Ireland, the upper classes in Ireland being clearly derived from the ancient Aryan stock who passed from Gallia into that country during the neolithic period.

We possess the measurements of the heads of some 25,000,000 of the present inhabitants of Europe and the United States of America. From these measurements we learn that a large proportion of the people now dwelling in the countries bordering on the Mediterranean Sea are a short, brunette, long-skulled race, descended, we believe, from those who, from the form of their skulls and other physical characters, occupied that part of Europe and the north of Africa in far distant ages—the Iberian race. Scandinavia and North Germany are inhabited by a tall, fair, long-skulled people derived from the proto-Aryan races who settled in that part of our continent in the neolithic epoch. A vast triangle having its base in eastern Russia and its apex on the Atlantic in south-western France is inhabited by a broad-skulled people derived from Mongoloid or Turanian ancestors. We do not for a moment affirm that these races, as such, have remained pure, far from it, but the results of the measurements of the heads of a great number of the existing inhabitants of Europe point to the conclusions above indicated; and this idea in confirmed by the indices of the splendid collection of crania which occupy so large a space in the museum of this College—a collection which was commenced by John Hunter and upon which a great amount of time and labour has been spent in describing and classifying the skulls which it contains; a work which in my opinion should be completed up to the end of the past century.

The characteristic physical type of palæolithic man may be still recognised among the inhabitants of western Europe, although their skulls have grown more capacious, especially in the frontal region. This change in the form of the cranium marks a corresponding advance in the capacity and organisation of the brain and consequently of the intellectual ability of man: it is in truth evidence of his inherent power to overcome the demand made on his mental capacity in order to cope successfully with his ever-increasing struggle for existence, consequent on the growth in number of his fellow-creatures and the more complicated social conditions of his surroundings. Doubtless the form of skull of a large proportion of the inhabitants of our island indicates a cross-breed formed by the intermarriage of the long and broad-skulled families of man who in distant ages met and intermarried in western Europe, thereby improving the stock of their descendants. Races of men such as the natives of Australia who have remained in an unchanged environment and without intermarriage with other people have made but little progress in their intellectual capacity, the form of their skulls continuing of the same type as those possessed by the palæolithic inhabitants of Europe.

The same causes to which we have referred, acting for long periods of time on people of the same race, has led not only to the hereditary transmission of their physical characters, such as those existing respectively among the northern, central, and southern inhabitants of Europe, but have also developed specialised areas of nerve structure in their brains, by means of which they have come to think, feel, and reason alike. In this way we are able to comprehend the source and the meaning of large bodies of men belonging to the same race being frequently moved to take common action on matters affecting the well-being of their race; they possess, in fact, like innate sentiments although separated from one another by great distances and living under diverse climates and environment. Their emotions and ideals harmonise because their progenitors existed for many ages under similar external conditions and consequently developed like specialised nerve-centres, which have been transmitted together with their physical characters to their successors and become crystallised in their laws and reflected in their conceptions of religion as well as in their social institutions.[22]

In illustration of our meaning we may refer to those revolting pages of history during which Belgium and the Netherlands passed under the dominion of Spain; the Iberian dominating for the time being over a thoroughly Teutonic race. Or we may contrast the existing condition of the Iberian population of South America with the Teutonic Anglo-Saxon inhabitants of the United States or between the latter and the negro population of America.

We have a chart here which shows the result of the recent general election held in this country; the question at issue was one in which the whole of the people in Great Britain were deeply interested. It is remarkable what a large proportion of the inhabitants of England and of Scotland, mainly of Anglo-Saxon origin, voted together on this subject; whereas a contrary opinion regarding this same question was held by the greater proportion of the people of Ireland, and to a large extent by the Welsh, most of whom are derived from Ibero-Mongolian ancestors. It is difficult to account for the diversity in the sentiments of the people above referred to unless we consider it due to their racial mental qualities.[23] Environment has doubtless played an important part in the evolution of these people, but their inherited racial character has had more to do with the position which the Anglo-Saxon race has gained in the world than the mineral wealth, climate, or protection afforded us by our seagirt coast.

The environment under which even a few generations of men exist would seem capable of influencing the structure of their central nervous system, as illustrated by comparing the mental qualities of our rural and urban population. The conditions under which the city-bred person, child and man, lives engender in the course of a few generations an unstable state of nerve structure, resulting in an excitable character, which if carried beyond a certain point leads to unsoundness of mind and may account for the increasing number of lunatics in this and the other large cities of Europe. General Sir Redvers Buller again, in speaking of the soldiers under his command in South Africa, refers to the fact that our city-born men have imperfect sight compared with men reared in the open plains of the Transvaal, thus affording us another example of the effects of environment on the race.[24] These are a few of the many interesting and important subjects which arise in connexion with the study of anthropology, including craniology; and the contents of our museum and library offer unrivalled opportunities to the student seeking for knowledge in those branches of science.

In conclusion, as already stated, much of Hunter's reputation was founded on the result of his labours in those branches of science which tend to elucidate man's nature; and during the past century a succession of English surgeons have carried on the work commenced by our great master, enriching our museum and endeavouring to make this College, not only an examining and licensing body, but, what it certainly should be, an Imperial Institution for the cultivation and diffusion of those departments of knowledge which bear on the art and science of surgery. The ideas entertained by John Hunter's immediate successors on this subject were ably stated by Sir William Lawrence in his lectures already referred to. He observes that "our own individual credit, and the dignity, honour, and reputation of our body, which we are bound to maintain, demand that surgeons should not be behind any other class in the possession either of the cultivation of branches of knowledge directly connected with surgery or in any of the collateral pursuits less immediately attached to it. It is only in reference to such views and objects that the Hunterian collection could have been accepted or can be of any use to this College." Hunter would, if he had still been with us, have thrown all his indomitable energies into the successful working of such an institution, and amidst the turmoil, strife, and competition going on around him would,

[22] The Origin and Character of the British People, by N. C. Macnamara, p. 192. See also the Westminster Review, December, 1900, p. 634.

[23] This idea is confirmed by the result of the elections that have lately taken place in Canada and the United States of America. The younger branch of our Anglo-Saxon race, forming as they do by far the larger proportion of the inhabitants of these vast and flourishing dominions, had to solve a similar question to that placed before the people of Great Britain, and they have responded by a vast majority to this call on precisely the same lines as those followed by Englishmen, moved, we believe, by common racial inherent sentiments.

[24] Sir Redvers Buller in one of his speeches is reported to have stated that: "In the first instance many of our men are city born, and England is not a very large country. We went out to a region where the principal number of our enemies were born in a very open country, a very large country, and it is not untrue to say that practically the vision, the ordinary sight, of our enemy was two miles at least further than the average sight of the English who were fighting against them. That is a matter of actual fact. An ordinary Dutchman or African can see a man coming towards him two miles before the man approaching can detect him."

as we see him in this picture, have been engaged in the earnest, accurate, patient study of nature. It remains for our younger members to emulate the example set them by John Hunter and by such service to secure for themselves lasting satisfaction, and beyond that add to the real dignity and utility of their College and their profession.

Three Lectures
ON
THE SURGERY OF PREGNANCY AND LABOUR COMPLICATED WITH TUMOURS.

Delivered at the Medical Graduates' College and Polyclinic on Jan. 11th, 18th, and 25th, 1901,

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LECTURE II.[1]

Delivered on Jan. 18th.

WHEN PREGNANCY AND FIBROIDS CO-EXIST.

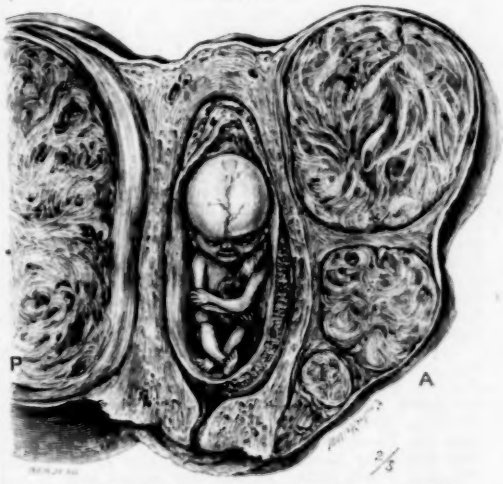
GENTLEMEN,—My object in this lecture is to set forth the perils which beset a woman when with her uterus occupied by fibroids she is so unfortunate as to conceive. This is a matter which has not received adequate consideration from the standpoint of modern surgery, and although many cases of this unlucky combination have been recorded no serious attempt has been made to deal with it in a comprehensive manner and in the light of the recent extraordinary advances in the surgery of the uterus. It will be useful to indicate the danger attending pregnancy, travail, and the puerperium complicated by uterine fibroids by some actual records.

CASE 1.—In 1897 I saw in consultation a woman, 40 years of age, who had been married 14 years. Ten days before I saw her the patient had been delivered of a child at term. Coincidently with the expulsion of the placenta an oval body, in shape like a fœtal head, presented at the mouth of the womb; this was at first regarded as the head of a twin and efforts were made to draw it forth, but careful examination revealed some nodular outgrowths on the uterus and no further attempts were made to extract this mass. When I saw the patient there was no difficulty as to the nature of the condition because a large submucous and septic fibroid protruded from the uterus into the vagina. The woman died three days later, being the thirteenth day after delivery. No operation could be entertained, the patient being too ill.

The practitioners in this instance were not the first to be puzzled by a large submucous fibroid in process of extrusion in a parturient woman. Yeld recorded a case[2] in which a woman, the mother of nine children, was delivered of a hydrocephalic child which had been dead for three days. A sessile tumour mistaken for the placenta was removed with the help of a blunt hook and three medical men. The woman died from shock two hours later. The tumour was nine inches in circumference and weighed four and a half pounds. Yeld ends his account of this dreadful case with the observation that "one similar to which has not, I believe, been recorded in the annals of midwifery practice." Even practitioners well experienced in midwifery, theoretical as well as practical, are occasionally puzzled by these complicated pregnancies, and a case recorded by such a well-qualified observer as Dr. F. H. Champneys may be used to illustrate this point. In 1877 he was called by the resident midwifery assistant at St. Bartholomew's Hospital to a woman, 25 years of age. The assistant, Dr. Maberley, recognised the case to be one of labour complicated with a fibroid and he determined to dilate the mouth of the womb and attempt delivery, but this being impracticable and thinking that craniotomy or perhaps Cæsarean section might be required he sent for Dr. Champneys who was acting for the physician accoucheurs. Dr. Champneys could not at first satisfy himself whether he had to deal with an extra- as well as an intra-uterine twin, an ovarian tumour, or a fibroid. He succeeded in pushing the tumour out of the pelvis and as it could then be felt above the pubes he punctured it through the hypogastrium with a trocar; as no fluid issued Dr. Champneys decided that it was a fibroid. Chloroform being administered a still-born child was, after some difficulty and "the expenditure of unusual force," extracted. This happened on Jan. 10th. A few days later the tumour was septic and sloughing and the patient continued so ill that she was conveyed into St. Bartholomew's Hospital. On Feb. 19th, exactly five weeks after her terrible delivery, a sloughing fibroid escaped from the uterus. She now began to improve and left the hospital eight weeks after delivery. This case is recorded in the St. Bartholomew's Hospital Reports, 1877. Dr. Champneys also took pains to collect from the current literature of that period quite a large number of records which show that fibroids often complicate labour *and frequently cause death*.

A comprehensive study of the cases in which fibroids complicate pregnancy indicates quite clearly that the life of the woman is in jeopardy not only so long as the fœtus remains within the uterus but also when it is expelled, whether this occurs prematurely or at the full time. The dangers may be set down in the following order. 1. The presence of the tumour not only leads to impaction but tends to produce abortion. In this event the mother sometimes dies from hæmorrhage. 2. A submucous fibroid may become septic and slough. More rarely a submucous fibroid may be driven out before the presenting part; more frequently it is extruded about five or six weeks subsequently to the delivery of the child. 3. A submucous fibroid may become œdematous and when the uterus empties itself the tumour may inflame and lead to peritonitis or the formation of extremely vascular adhesions. 4. Occasionally a pedunculated subserous fibroid possesses such a long pedicle that it will become incarcerated in the pelvis and simulate an ovarian tumour. This condition is fortunately rare. It will be an advantage to illustrate some of these conditions by the details of actual cases. An early (if not the earliest) sign to lead a pregnant woman with a fibroid in the uterus to seek relief is pain. This is in the majority of cases due to impaction.

FIG. 3.



A gravid uterus, with fibroids, in sagittal section. At the beginning of the third month impaction occurred; this was relieved, and as the uterus with its tumours was too long to lie in its natural position axial rotation occurred. The antero-posterior length of the distorted organ was 20 centimetres. Only a portion of the large tumour is shown in the figure. A, Anterior aspect of the uterus. P, Posterior aspect of the uterus.

CASE 2.—A woman, 30 years of age, married in October, 1897, and after missing three menstrual periods was seized with severe pain in the pelvis and retention of urine. Dr. Mills found a mass in the pelvis which he regarded as a

[1] Lecture I. was published in THE LANCET of Feb. 9th, p. 367.
[2] Brit. Med. Jour., 1871, vol. i., p. 586.

retroverted gravid uterus. With the aid of an anæsthetic he succeeded in pushing the mass out of the pelvis but found that a "swelling" had appeared in each iliac fossa. These "swellings" were very tender and the patient complained of great pain. It was clear that either a fibroid of the uterus or an ovarian tumour was complicating pregnancy. Prompt measures were taken and next morning I performed cœliotomy and found a fibroid growing from the posterior wall of the uterus lying in the right iliac fossa, and a smaller tumour in the anterior wall occupied the left iliac fossa. I removed the uterus and the left ovary and Fallopian tube. The patient recovered and was in excellent health in 1900.

A study of the uterus after its removal is very instructive. It will be seen on reference to Fig. 3 (which was drawn from the parts after they had been carefully hardened and bisected) that the total antero-posterior length of the uterus

FIG. 4.

A pregnant uterus, with multiple fibroids, removed from a single woman, aged 31 years. The operation was undertaken because the tumour had undergone rapid enlargement. The patient absolutely denied the probability of pregnancy. (Museum of St. Mary's Hospital.)

is 20 centimetres. The average conjugate diameter of a pelvis with the soft parts in position is about 10 centimetres, so that it was quite impossible for this uterus to be accommodated in its normal position in the pelvis. It appeared to me that the fibroid on the posterior wall of the uterus became gradually impacted in the pelvis as the uterus enlarged after conception, and at last induced retention of urine by compressing the urethra. When Dr. H. H. Mills relieved the impaction axial rotation took place to the extent of a quarter of a circle, due to the accommodation of the fibroids in the iliac fossæ, hence the pain and acute suffering which supervened after the uterus was pushed out of the true pelvis.

The study of this case induced me to look very carefully into the clinical records of cases where trouble arose early in the course of pregnancy associated with uterine fibroids, and there is one fact which stands out in a very significant manner—in quite a large number of instances the patient seeks relief because her tumour has increased rapidly and causes pain, but she rarely suspects that she is pregnant. It is important to remember this even in cases where women have lived in sterile wedlock many years. The following case will serve as an example.

CASE 3.—A woman, 44 years of age, had been married 14 years and had never been pregnant. On examination an abdominal tumour was found which caused great pain and as it seemed to be quickly increasing in size the patient sought admission into the Middlesex Hospital. Mr. Andrew Clark performed hysterectomy as the uterus was occupied by two large submucous fibroids. The uterus also contained a fœtus of about four and a half months. The patient made an excellent recovery.[1]

The museum of St. Mary's Hospital contains a specimen which illustrates in an unmistakeable way the futility of relying on the statements of unmarried women when pregnancy is concerned. The preparation (Fig. 4) is a uterus deformed by fibroids and occupied by a fœtus of about the fourth month of gestation removed from a single woman, 31 years of age; the operation was undertaken because the "tumour" had undergone rapid enlargement and the patient absolutely denied the probability of pregnancy.

In each of these cases the fact of the uterus being gravid was overlooked. The line of treatment adopted probably saved each patient a serious illness.

The impaction of a uterus with fibroids secondary to conception is not only responsible for pain, and in a certain proportion of cases to retention of urine from direct pressure on the urethra, but it probably accounts for the frequency with which abortion occurs under these conditions, and it is interesting to observe how even a relatively small fibroid will impede the ascension of the uterus as it enlarges during pregnancy and give rise to great trouble. For example, a woman under my own care four months advanced in pregnancy complained of pain due to a "lump" in the left iliac fossa. This lump elicited a variety of opinions at a consultation held to determine the course of treatment. I regarded it as a sessile fibroid of the uterus near the brim of the pelvis. At the operation this was found to be the case. The tumour in shape was something like a kidney and about as big, and had grown from the anterior wall of the uterus near the left cornu; as the uterus increased this fibroid became impacted under the pelvic brim. The uterus continued to rise out of the pelvis as the pregnancy progressed, but the fibroid remained fixed, and as a result the uterus slowly rotated, and at the time of the operation the degree of rotation amounted to rather more than a quarter of a circle. I enucleated the tumour. The patient recovered, the pregnancy went to term, and she was successfully delivered of a living child.

CASE 4.—In December, 1900, a woman, 32 years of age, was placed under my care with the following story. She had been married four years and had twice miscarried, and was now pregnant for the third time; the pregnancy had advanced to the fourth month when she began to experience great pain in the pelvis, but being particularly anxious to possess a living child, Mr. L. E. S. Beer had kept her in bed for a month. As the uterus rose in the abdomen a tumour became obvious, but we could not determine its precise character. As it was clearly the source of her pain I explored it through an oblique incision to the right of the linea alba and found a subserous fibro-myoma growing from the uterus and adherent to the bladder. The tumour was of about the size of a tennis ball and I succeeded in peeling the bladder from it without opening its cavity. The patient made an uninterrupted recovery, the pregnancy continues undisturbed, and I am full of hope that the gestation will end in success.

I have subjoined some cases in the form of a table, because I think few surgeons really appreciate the way in which the uterus tolerates surgical operations even when pregnant. In Dr. W. H. Fenton's case I was present at the operation, which was undertaken with the impression that the tumour was of ovarian origin and had probably undergone axial rotation. The fibro-myoma in that case was larger than a cricket-ball. An important clinical point and one that requires emphasising is this: in all the cases

[1] Middlesex Hospital Reports, 1897, p. 218.

in the table the patients complained of great and continuous pain, and it was for the relief of pain that the operations were undertaken. In nearly all the

TABLE I.—*Cœliotomy for the Removal of Subserous Fibroids during Pregnancy.*

Operator.	Month of pregnancy.	Result.	Reference.
Thornton	Seventh.	Died.	Transactions of the Obstetrical Society of London, vol. xxi., p. 163.
Bland Sutton	First.	Went to term.	Clinical Journal, vol. xi., p. 305.
Bland-Sutton	Fourth.	Went to term.	Ibid., vol. xvi., p. 404.
Morris	Fifth.	Went to term.	Transactions of the Obstetrical Society of London, vol. xl., p. 256.
Fenton	Fifth.	Went to term.	Unpublished.
Bland Sutton	Fifth.	Undisturbed.	This lecture.

cases the operation was undertaken on an erroneous diagnosis. In my first case the swelling was thought to be a pyosalpinx. Knowsley Thornton considered the tumour in his case to be an ovarian cyst, and Morris diagnosed the swelling in his patient to be of renal origin.

I have often recognised pedunculated and sessile fibroids in a pregnant uterus that caused no inconvenience, but when a fibroid interferes with the bladder or the bowel it will cause pain, and should it become incarcerated in the recess of the sacrum or under the brim of the pelvis and prevent the uterus rising into the abdomen it will also cause pain, but, what is more significant, it will provoke abortion.

Fibroids when they complicate pregnancy are not only dangerous in that they frequently cause abortion but may obstruct delivery when the pregnancy goes to full time; the duration of pregnancy may be absolutely normal and the child may be born without any hindrance, but the fibroid itself is inimical to the life of the mother.

One of the great dangers which surround all women during their lying-in is septic endometritis, and this is a serious sequel to delivery with a normal uterus, but it is a more serious matter when an infected uterus contains fibroids. This is a subject to which I have given close attention and it is worth our careful consideration. Every fibroid is completely invested by a covering of fibrous tissue which not only isolates it from the tissues of the uterus but also supplies it with blood, for the vessels on which the fibroid depends for its nourishment and growth are derived from those ramifying in the capsule. When this capsule is damaged the fibroid invariably dies, and if septic organisms gain access to it gangrene is the inevitable result. This is always a dangerous condition and in many instances entails the death of the individual.

Necrosis and subsequent gangrene of a fibroid arise usually from injury, and this may be due to the examination of the uterus with a sound, dilators, curette, or the forceps of the accoucheur. Occasionally it happens as a result of the efforts of the uterus itself to expel a pedunculated fibroid. It will serve our purpose to study a case of this kind in detail, as it will enable us to appreciate more readily what happens when a fibroid is injured in the course of a labour.

CASE 5.—Some years ago I saw a woman with a large black mass protruding from the vagina; blood oozed freely from it and she was extremely weak and ill, with a temperature of 103° F. and a pulse-rate of 120 to the minute. This mass was a pedunculated fibroid which had been extruded from the uterus and had become septic; its capsule had been destroyed and the whole tumour was in reality a stinking slough. Under chloroform it was removed and the uterine cavity was thoroughly irrigated with sublimate solution (1 in 2000). For a few days all seemed well, there was no pain or tenderness; on the evening of the third day after the removal of the slough the patient complained of sudden abdominal pain followed by the signs of shock; this gradually passed off and severe peritonitis followed and she died two days later. At the post-mortem examination the uterine cavity was found to be occupied by sloughs of endometrium and the mucous membrane of the Fallopian tube had also sloughed; fragments of it were projecting through the unclosed cœlomic ostia of the tubes and septic fluid had also leaked in the general peritoneal cavity and set up fatal peritonitis. This instructive specimen is preserved in the museum of the Royal College of Surgeons of England. It formed one of the series of specimens which accompanied my essay for which that College awarded me the Jacksonian Prize in 1892. This specimen illustrates extremely well the pathological changes which arise in fibroids subsequently to abortion or delivery. The expulsive efforts of the uterus force out the fœtus and in a fair proportion of cases they will cause the fibroid to extrude into the vagina, where it becomes septic and initiates a condition of things such as existed in the case just described. When the tumour is small and sessile the nature of the case is not always suspected until profuse bleeding from the uterus, and the occurrence of urgent clinical signs of sepsis lead to a physical examination of the uterus.

It does not necessarily follow that in every parturient woman with a fibroid the tumour becomes septic. Indeed, a septic fibroid does not always cause death; for example, Dr. Champneys's patient had a grave illness and may be described as being in the "jaws of death" for many weeks until the sloughs escaped and the septic signs abated. There is a wonderful means by which nature blocks one avenue by which lethal effects are produced from septic processes arising in the uterine cavity. When the infective process extends from the endometrium to the Fallopian tubes it often leads to occlusion of the cœlomic ostium of the tube and thus prevents the direct leakage of septic matter into the peritoneal recesses of the pelvis. This happens more frequently than many of us suspect and I have on several occasions drawn attention to the fact that septic endometritis after labour is responsible for a far larger proportion of cases of acute and chronic salpingitis than gonorrhœa.

I am anxious not to be misunderstood in relation to sepsis and fibroids. It does not by any means follow that when a parturient woman has a fibroid in her uterus that it will of necessity become septic during her puerperium, much will depend on the care and skill of the medical attendant, the midwife, and the nurse; and even if the tumour does become septic and slough it need not, as I have said before, destroy the patient, the ultimate effect will in a very large measure depend upon the variety of the micro-organism by which the patient has become infected.

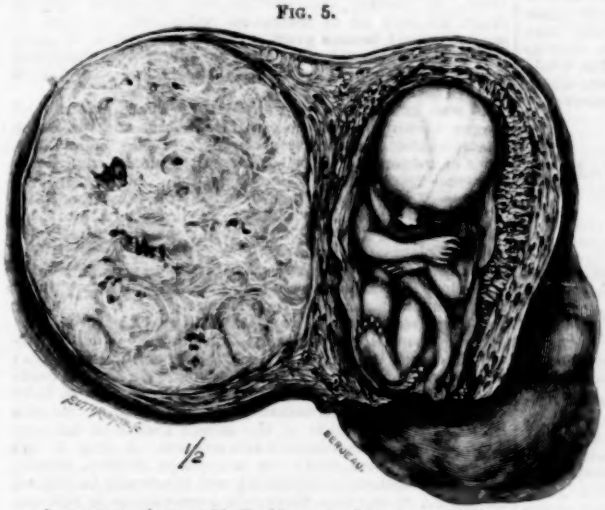
It has happened to me on many occasions to perform hysterectomy on account of fibroids, and there is one very important feature which comes out in the clinical history of the patients: many state that they never had any pain or suspected the existence of a tumour till the occurrence of a miscarriage; since then good health has been denied them. When one gets a definite statement of this kind it generally happens at the operation that one or both Fallopian tubes have the cœlomic ostium occluded and the tube distended with sterile serum and sometimes with pus. These distended tubes are the legacy of a septic endometritis supervening on the abortion. On one occasion I had an excellent opportunity of studying the early stage of septic infection in a fibroid.

CASE 6.—A woman, 35 years of age, had conceived and, as far as she could reckon, the pregnancy had advanced about three and a half months when such disturbance ensued as led the medical man in charge to fear the existence of tubal rather than uterine pregnancy. We could not decide whether the pregnancy was uterine or tubal, but we also determined that it was complicated with a tumour; the same evening abortion occurred. Dr. Champneys also saw the patient with us, but could not decide whether the tumour was ovarian or a fibroid, and we decided to leave the tumour until after the puerperium unless dangerous symptoms supervened. A few days later the abdominal signs were ominous, and on the ninth day of the puerperium I performed cœliotomy and removed a pedunculated subserous fibroid as big as a cocoa-nut. This fibroid adhered to the adjacent bowel, the omentum, and the peritoneum, it was very soft and œdematous, and the abdomen contained a quantity of yellow glutinous lymph. Microscopic examination showed the tumour to be thoroughly infiltrated with inflammatory cells. The patient made an uneventful recovery and 30 months afterwards became the mother of a fine infant.

The condition of the tumour in this case furnished me with some interesting points. It has happened to me whilst operating on subserous fibroids, and also in watching operations by other surgeons, to find the tumour adherent to the great omentum and this structure had the epiploic arteries and veins enormously developed, the arteries being in many instances as big as the radials; thus the whole of the omentum connected with the tumour resembled an enormous rete composed of large tortuous arteries, veins, and occasionally lymphatics as big as the cephalic vein; the dilated lymphatics contained fluid of a pale straw colour. The contrast of the maroon tint of the blood in the arteries, the deep blue of the veins, and the light yellow of the lymphatics with their very thin walls, formed an anatomical picture scarcely likely to be forgotten by those who have had to deal with such a condition. The interest in relation to our present study is this: all the cases in which I have met with this great development of the blood-vessels in the omentum have occurred in patients who have been pregnant, and they have always furnished the definite statement that the tumour began to trouble them after a confinement or miscarriage, and that they had a long illness. This I would interpret in the following way. Labour or abortion was complicated with a fibroid. The endometrium became infected and this extended to the fibroid and led to the formation of adhesions and their gradual vascularisation from the omental vessels; eventually free anastomosis arose between the vessels in the capsule of the fibroid and the epiploic arteries. The most extraordinary example of a pathological arterial rete of this kind I have ever seen was in a case of tubal pregnancy which went to term and the placental vessels directly anastomosed with the enlarged vessels in the great omentum.

The facts at our disposal indicate very certainly that uterine fibroids, even more than ovarian cysts, are a grave menace to successful pregnancy and in a large number of cases are directly responsible for a premature termination of the pregnancy, and when abortion happens the patient requires to be safeguarded most strictly against infection, for it may involve the fibroid, and in this event the patient not only runs a very great risk of losing her life, but she certainly will have a long illness, and in many instances a serious operation may be necessary to prevent her from becoming a chronic invalid. We must not forget that a woman may have one and indeed several fibroids in her uterus and yet be the happy and healthy mother of children, but no one will deny that the presence of a fibroid in a gravid uterus is an additional peril to those which are proverbially associated with pregnancy. It occasionally happens that a woman comes under observation known to be suffering from a combination of pregnancy and fibroids and a careful examination discloses the fact that if the pregnancy goes to term delivery by the natural passages would be impossible. In these circumstances hysterectomy is justifiable. This is illustrated by a specimen in the museum of St. Bartholomew's Hospital (Fig. 5). It is a gravid uterus with a large fibroid in its wall removed by cœliotomy from a woman, 44 years of age, under the care of Dr. W. S. A. Griffith. He found that the fibroid so blocked the pelvis that delivery would be impossible. It was removed by Mr. Harrison Cripps.

FIG. 5.



A pregnant uterus, with fibroids, removed by supra-vaginal hysterectomy from a woman, aged 44 years. The fœtus is about four and a half months. (Museum of St. Bartholomew's Hospital.)

FIG. 6.

A pregnant uterus, with fibroids, removed from a woman who five years previously had nearly lost her life from the obstruction the fibroids offered to the passage of the fœtus. Case 4 in Table II.

CASE 7.—A married woman came under my care in great distress because she knew that she had fibroids and feared that conception had also occurred. Her distress was due to the fact that five years previously she had been in the same straits and though prematurely confined had been so ill and ran such a narrow risk of dying that she wished to avoid such a contingency if possible. At a consultation it was decided that one of the fibroids so blocked the pelvis that if the pregnancy continued the fœtus could not be born through the natural passage; after very careful consideration hysterectomy was advised and successfully carried through (Fig. 6).

We may now turn our attention to cases where, in spite of the fibroid, pregnancy has continued uninterruptedly to term and where labour is imminent or actually in progress when the accoucheur finds the way barred by a tumour which he regards as a fibroid. A study of the literature indicates that in Great Britain the principles which used to guide the conduct of such labours were as follows. Attempts should be made to push the tumour out of the pelvis and then extract the fœtus by version or with the aid of forceps. If the tumour cannot be pushed out of the pelvis then Cæsarean section should be performed. In recent years, however, when the impaction cannot be relieved it has become the practice with many obstetric surgeons to perform Cæsarean section and then to remove the uterus, a method which has been eminently successful. It is also a practical fact well worth bearing in mind that when the uterine tissues are softened by the pregnancy and the ligaments are stretched by the growing uterus hysterectomy is a simpler operation and the convalescence is usually quicker than when performed for fibroids alone. In order to show that this improved method of dealing with fibroids complicating pregnancy and labour is finding favour I have added a list of some recently recorded operations which have been

performed in London with the hope that other operators may be induced to record their experience.

TABLE II.—*Hysterectomy for Fibroids complicating Pregnancy and Labour.*

Operator.	Month of pregnancy.	Result.	Reference.
Cripps, H.	Fourth.	Recovered.	Museum of St. Bartholomew's Hospital.
Clark	Fourth.	Recovered.	Middlesex Hospital Reports, 1897, p. 218.
Bland-Sutton	Third.	Recovered.	Clinical Journal, vol. xi., p. 305.
Bland-Sutton	Second.	Recovered.	Ibid., vol. xvi., p. 404.
Gow	Eighth.	Recovered.	Transactions of the Obstetrical Society of London, vol. xxxix., p. 7.
Galabin	Sixth.	Recovered.	Ibid., vol. xlii., p. 256.
Horrocks	Fifth.	Recovered.	Ibid., ,, ,, p. 242.
Routh	Ninth.	Recovered.	Ibid., ,, ,, p. 244.
Spencer	Ninth.	Recovered.	Ibid., vol. xxxvii.
Duncan	Second.	Died.	Middlesex Hospital Reports, 1897, p. 182.
Duncan	Fourth.	Recovered.	THE LANCET, March 3rd, 1900, p. 613.

It cannot to my mind be too strongly set forth that in cases where a fibroid has obstructed labour and has been successfully "pushed up," as the phrase goes, if any dangerous symptoms supervene during the puerperium then cœliotomy, followed by myomectomy (or hysterectomy if the need be), should be carried out without delay. That myomectomy and enucleation are successful during the puerperium I have already testified in this lecture (Table I.).

I am well aware that in a very large number of instances fibroids and pregnancy coexist and no harm ensues, for though the tumour occupies the pelvis in the early stages it is so much "part and parcel" of the uterus that, as the enlarging organ rises out of the pelvis, it carries the fibroids with it. In the case of an incarcerated ovarian tumour it is different, for the more the fundus of the uterus ascends the more the ovarian pedicle elongates and the more perfect the incarceration becomes.

From a very broad survey of this question I have arrived at the following deduction: ovarian tumours have given more trouble to pregnant and parturient women than fibroids, but fibroids have been far more lethal as they so frequently destroy puerperal women from sepsis. The whole subject is an instructive study of the baleful effects which environment often imposes on so-called innocent tumours.

REMARKS ON AGGLUTINATION BY PLAGUE BLOOD.

BY E. KLEIN, M.D., F.R.S.

VARIOUS observers have stated that the blood of persons convalescent from plague possesses the power of agglutinating plague bacilli of culture. To mention a few only of these observers, the late Dr. Leumann in several reports of the Bombay Plague Laboratory found that the blood not only of persons convalescent from an attack of plague, but also of those who had been injected with the Haffkine plague prophylactic, possesses marked agglutinating action; Zabolotny,[1] as also other observers, speaks of a similar agglutinating power of the blood of plague convalescents; and Dr. A. K. Chalmers, at the meeting of the Incorporated Society of Medical Officers of Health on Nov. 10th, 1900, mentioned that in Glasgow this agglutinating action of the blood of plague convalescents was also ascertained.

Now, without in the slightest degree intending to cast any doubt whatever on the correctness of these observations and statements, it may be permissible to point out that unless the method according to which the experiments were made is mentioned in detail the nature of these observations is not easy of comprehension. All those who have worked on specific agglutinations and all those who are constantly using this most valuable diagnostic method—to wit, in typhoid fever—are agreed on this, that all agglutination experiments must start with a good emulsion of the microbes on which the agglutinating action of blood has to be tested. Unless a good emulsion is used in which the bacilli are isolated and evenly distributed no conclusion can be drawn; indeed, no reliable experiment at all can be started. If, for instance, a distribution of the bacilli is employed in which already at starting the bacilli are aggregated in larger and smaller clumps, the experiment of testing the agglutinating action of blood, serum, or any other fluid on such an emulsion can be of little value. It is well known that of the typhoid bacilli, cholera vibrios, and other microbes a good emulsion—i.e., a uniform distribution of the microbes either as a broth culture, or as a bouillon, or salt emulsion made from the growth on agar or gelatin—can easily be prepared, and therefore no difficulty is experienced or apprehended in starting without further precautions the required agglutination experiments. But this, unfortunately, is not the case with the plague bacilli. The plague bacilli in a broth culture form naturally at the sides and the bottom of the broth granular and floccular aggregations—masses of chains of bacilli intimately bound together—the main part of the broth remaining clear. However much such a broth culture is shaken there are always present, when a droplet is examined under the microscope, a sufficient number of clumps to vitiate all further proceeding in the agglutination test. On agar, glycerine-agar, or serum the plague bacilli form a characteristic sticky viscid growth, due to the fact that the bacilli produce on these media a gelatinous, sticky, interstitial substance, by which the bacilli remain coherent. If a particle of such a growth is placed in bouillon no amount of shaking can produce a workable emulsion, microscopic specimens show numerous clumps and coherent masses, and therefore no reliable test can be made with such a distribution. This will be sufficient to show that to perform the agglutination test with plague blood on plague culture the initial desideratum of having a good emulsion of plague bacilli meets with great difficulties. These were the difficulties I met with in trying to repeat the observations recorded by the above-named authors, for, unfortunately, the method of preparing the required emulsion was not stated by them. A positive agglutination test of plague bacillus might not only be of theoretical value, but, as must be obvious, would possess great practical importance in those cases of convalescent persons in whom the bacteriological or other evidence did not directly demonstrate their illness to have been plague.

It was known to me that gelatin surface cultures of plague bacilli do not possess the viscidity and stickiness characteristic of agar or serum cultures; they appear of a drier character, and therefore I tried to obtain a workable emulsion from such a gelatin culture. Consequently a particle of the growth was distributed in bouillon and by shaking this it was attempted to produce a workable emulsion. But this was of no avail; the bacilli, although in many places in an isolated condition or in small masses, remained sufficiently numerous in bigger clumps, and therefore made this distribution unfit and unsatisfactory for a reliable experiment.

It occurred to me, however, that by distributing the gelatin growth in physiological salt solution—a fluid otherwise known to be capable of dissolving interstitial (globulin) substances, it might be possible to obtain a good and workable emulsion. The experiment proved this contention to be correct. There was no difficulty in making a good emulsion by shaking up a particle of the gelatin growth in ordinary (0·75 per cent.) physiological salt solution. A drop of this emulsion examined under the microscope showed, indeed, the bacilli uniformly distributed and practically in isolated condition; at any rate, there were no obnoxious or vitiating clumps. And such a microscopic specimen shows (sealed up) even after being kept for 24 hours, the same isolated condition of the bacilli. The first and important difficulty of having a good emulsion of plague bacilli was thus overcome. It was now possible to proceed to test on such an emulsion the agglutinating action of plague blood or of any other substance.

I had already from a number of previous indications the

[1] Archives des Sciences Biologiques de St. Pétersbourg, vol. viii., N. 1, referred to in the Centralblatt fur Bakteriologie und Parasitenk., Band xxviii., N. 25, p. 981.

suspicion that bouillon *per se* is not without effect in causing agglutination of plague bacilli, and the first experiments were therefore made with sterile alkaline bouillon. The result was sufficiently striking. If to a good salt emulsion of plague bacilli (taken from the gelatin surface) bouillon is added in the proportion of 1 of bouillon to 20 of emulsion the result of positive agglutination is evident already in from 12 to 15 minutes. Instead of the uniform distribution of more or less single bacilli there is now everywhere a general massing of the bacilli into larger and smaller clumps and a corresponding disappearance of the previous single bacilli. Even when the dilution is 1 in 40 the same clumping is noticeable, though somewhat later (in from 15 to 30 minutes). From this it is evident that for the performance of the agglutination experiment with plague bacilli the method of making an emulsion of the microbe in bouillon generally used for other bacilli—e.g., typhoid and cholera—is not applicable.

The next experiments were made with normal human blood and with normal mouse's blood. In all instances a good salt emulsion of plague bacilli from a gelatin culture was made and to this the blood was added in the proportion of 1 in 20 and 1 in 40. Not even after 24 hours was there any difference noticeable between the control (emulsion) specimen and the specimen made with emulsion *plus* blood.

The next experiments were made with blood of rats which had been injected first with Haffkine's prophylactic, then with small doses and finally with large doses of living plague culture. These latter injections produced slight bubo and general illness, but after a few days the animals recovered, whereas the control (normal) rats injected at the same time and with the same amount of the same living culture succumbed. The blood of two such rats which had recovered was used for the agglutination test, three and five weeks respectively after the last injection. The proportion of blood added to the salt emulsion of plague bacilli was 1 in 20 and 1 in 40 and the result was distinct agglutination in 10 minutes; by the end of 15 minutes or so all bacilli had clumped into smaller and larger clumps, leaving the intervening parts practically free of isolated bacilli. Such rats' blood produced not only sooner the agglutination but the clumps were larger than in the case of the bouillon experiment. From this, I think, it follows that the blood of the rat, convalescent from plague, has positive agglutinating action on an emulsion of plague bacilli. Whether tested by this method also the blood of a human being convalescent from a mild attack of plague or after infection with Haffkine prophylactic has, as might be expected, this agglutinating action, I am from my own experience unable to say.

St. Bartholomew's Hospital.

WHY ARE BOTH LEGS OF THE SAME LENGTH?

BY GEORGE E. WHERRY, M.C.CANTAB., F.R.C.S.ENG.

THE poet Pope must have been easily satisfied when he wrote the lines—

> "Why has not man a microscopic eye?
> For this plain reason—man is not a fly."

Here we are reminded of the tailor who thought that man had two legs in order that he might wear breeches. In this new century we are more persistent in our inquiries, less satisfied with our answers, and some of us even wish to interfere or try to mend. For these body-cobblers all simple mechanical influences become of the utmost importance as being to some extent under their control. Man cannot meddle with the mechanism of the sun, and we have therefore the more confidence in daylight; nevertheless we may watch the effects of great laws, as of symmetry or heredity, and help ourselves by the study.

The general question whether "a man by taking thought can add one cubit to his stature" is not now much to be considered, but rather whether a *child* has chances of gaining length of limbs apart from inherited potentiality. Though much would depend on heredity, something would depend on conditions during growth. The Eton boy is taller than the workhouse boy of the same age; and Frederick William's tall guardsmen with selected tall wives may still stamp the present generation with a tall progeny. Grogan found a long-legged people living on the Nile sudd who may have developed from mudlarks to storks by the unusual conditions of their life for generations, and I am prepared to believe that individuals and peoples may be stunted in stature by weight-carrying and over-walking in youth.

As a fact, our lower limbs are not usually both of the same length, though they are so for all practical purposes. There are slight differences in length, usually an excess in the left, which does not influence the gait or in any way limit the usefulness of the legs in progression. That the lower limbs are longer than the upper is an advantage; but it is interesting to note that they are not born so, and the short helpless lower limbs of the infant are rather prehensile than ambulatory. With regard to the upper limbs of the adult these prehensile organs are shorter and smaller than the lower limbs, and the right arm is almost always longer than the left. The right humerus and radius taken together will be from one-third to three-fourths of an inch longer than the left. This is not so at birth, but becomes so during growth, and the increased development is probably associated with the use of the right arm and hand. In the gorilla and anthropoid apes, the adult skeletons which I have measured in the Cambridge museum show no such difference. It interests me to note that the right arm of man gains on the left not only in size and strength but also in length by excessive use. The gorilla, having no need to use one limb more than the other, is ambidextrous or ambisinistrous. A climbing monkey has been seen to swing from bar to bar across a space of 20 feet and in the transit to catch a bird in the air with wonderful precision, assisting itself with five prehensile organs—four limbs and a tail.

The length of the arms in the anthropoid apes is very striking and one would like to train a baby gorilla to stand and walk upon its legs expecting that it would grow longer in the legs than other gorillas. It may be if a child were trained to walk upon its hands, and the feet were used like those of the Brussels painter with prehensile toes, the arms might then grow as long and as strong as the legs. About legginess generally it may be stated that we are not born leggy like the foal or the kangaroo, but we gradually achieve legginess. At about 15 years of age the human boy shows what he can do in that direction and develops this strikingly human characteristic. What an extraordinary difference in this aspect from the foal, who has to follow the mare about the field, and is born with limbs well adapted for that purpose.

The kangaroo is an example of an animal with disproportionately long hind limbs. In the development of this creature after an intra-uterine life of less than six weeks the mother by means of its mouth then takes from the womb the tiny one-inch fœtus and places it inside the pouch, where the fœtus finds, and hangs on to, the teat of the mother's mammary gland; by the time the baby kangaroo leaves this second uterus, in about nine months, its hind limbs have acquired their adult proportions and become serviceable for hopping about. After this the infant kangaroo occasionally returns for food and shelter to the marsupial pouch always to its own teat though younger infants are in possession of other teats.

In organs which grow continuously through life it is necessary for healthy development that natural resistances should be continually offered to the growing organ. Without this opposition the individual suffers, as in the case of the rat when, a tooth being lost, the unopposed tooth tacks the jaws together or seriously hampers the bite by its increased length.

With regard to mechanical causes which influence growth it is difficult to avoid the speculation that the direction of a spiral often depends upon some outside resistance so applied as to determine a right or left helix, even if the spiral itself be not so made. That this direction is so determined is made probable by considering a carpenter's shaving. The reason of the spiral form of a right-handed screw which is usually seen in shavings is because the workman tends to drive his plane slightly to the left. He plays, as a cricketer would say "a little to the on"; if he made a perfect stroke fore and aft a simple coil would result; in "playing to the off" or standing on the wrong side of the bench he would make a left-handed twist in his shaving. The carpenter is usually all unconscious of the twist that he makes and

imparts to the shavings and it is a pretty piece of evidence of how slight and subtle force determines the direction of a spiral.[1]

In the rare specimen in the Cambridge museum of a narwhal with two tusks both the tusks have a sinistral spiral. In the usual one-tusked specimen the left is always developed and also carries throughout a sinistral twist, but the unerupted tusk, 10 inches long, which is buried in the bone, exhibits a perfectly straight fibre and no spiral is to be found. This suggests that the spiral is formed and its direction determined after it leaves the bone and becomes opposed to the waves during growth. The creature ploughs or planes (as does the carpenter) and plays to one side so as to give a sinistral direction to the spiral which develops in growth. When by rare chance a double tusk appears the creature still from habit carries its head to one side and both tusks show the sinistral spiral. The spiral horns of animals such as the koodoo are symmetrically arranged, are right and left by certain rules to which few exceptions[2] only are found. These horns keep approximately of the same length, partly by being exposed to equal resistances and like conditions during growth. The hoofs of a sheep which had lived among the boggy soil of the Falklands show the necessity of suitable resistances as well as the effect of undue moisture. Each portion of the cloven hoof is of enormous size and length, twisted and intertwined in a complicated twirl.

To return to the question of the length of the lower limbs, it is important to consider the fact that bones increase in length not so much by interstitial deposit as by addition to their ends; that is, by progressive ossification of the layer of cartilage which intervenes between the end of the shaft and the epiphysis. Ossification goes on till the component parts of the bone are all united by bony matter, and thus the stature of the individual is determined. If from inflammation or injury an epiphysis be damaged one limb may be shorter than the other, or inflammatory stimulation may even induce an increased length in the bone affected. The skeletons of tortoises, not being subjected to sudden jars, have no epiphyses at the ends of the long bones. Whereas in the leaping frog the extremities of the humerus and femur long remain as separate epiphyses.

The continuous concussions to which the ends of the bones of the lower limbs are exposed, when a vigorous child is excited by its own natural spirit to run about, are doubtless of great value in assisting the growth in length of the lower limbs, which soon lose their infantile character, and become adapted for running and walking. By exposing the lower limbs to the same influences and resistances during their entire growth we manage to maintain them of the same size and of the same length, and gentle jars upon the epiphyses at the joints may be considered favourable to growth.

If, then, by any evil chance one limb be shorter than the other in a growing child, we must find the cause of that shortening, and if there be nothing against the rational plan of treatment—after study of the epiphyses and joints of the child—it will not suffice merely to put a boot with a thicker sole on the shorter limb so as to avoid a tilted pelvis and a crooked spine. In such a case carefully planned exercises will be needed, especially directed to the shorter limb, during all the period of growth. The punishment must be made to fit the crime, and, so soon as the limb can be trained to a sufficient standard of strength, one-legged balancing and hopping exercises will encourage the growth of the weak limb.

It is probable that sometimes when the heel can be brought down in the short leg that there is more shock to the limb on that side during progression until the boot be worn, and if intermittent pressures and succussions are of any value in respect of gaining length this boot may actually retard growth by lessening the shocks, unless suitable exercises be performed with the short limb. No doubt the short limb will require all care to give it rests as well as resistances but the hopping (as at hop-scotch) or one-legged exercises (like the one-legged knee-bender) gradually taken will give a power of poise or balance which is of great advantage.

A child may have quite a strong limb and yet a poor balance, defining balance as the power of maintaining the equipoise under all conditions with the minimum of muscular effort. Continual standing about and long walks are bad for growth and are to be avoided; cycling should only be used to save fatigue in going to or from the playing-field or gymnasium. Long-continued cycling is bad and resembles walking on air-cushions which would give no judicious stimulation of the joints. Much cycling for a female child would run some risk of narrowing the pelvis, yet the cycle could be wisely used on the way to the dancing class or school. The natural gait of the child is a hop, skip, and jump, and not the walk two by two of the old-fashioned girls' school.

The difference between the bone-setter and the surgeon is nowhere more apparent than in cases demanding exactly opposite plans of treatment. In cases of disordered joints and epiphyses rest is imperatively demanded, whether in bed or on Thomas's splints, whereas with sound joints and epiphyses the limb must be actively used under supervision of the surgeon. In such a common case as that of a child with one lower limb shorter than the other after an attack of infantile paralysis the nerve-storm has been long past, and it is necessary to remove the effects of the storm on the limb. After tenotomy, passive movements, and massage have been considered or used, then the child with a suitable boot should begin and continue the one-legged exercises which have been chosen as most helpful, and these must be watched and worked hopefully during the time of growth. The exercises chosen must include those which give gentle natural shocks to the joints. The effect on the local circulation of stamping and beating the feet is valuable, and is immediately felt when an Alpine guide beats the half frozen feet of his Herr.

In the foregoing remarks it will be easy to separate the facts from mere speculations. The practical suggestions are founded, I hope, on the facts, and they are set forth in the belief that, with all the care taken to fix and set at rest the joints and limbs, it is easy to neglect stimulation and encouragement of growth when active treatment is needed. The period of growth in the human subject is so prolonged that a surgeon past middle age may not hope to live to see the results of his advice.

Cambridge.

[1] "On Spiral Growth," THE LANCET, Jan. 1st, 1898, p. 24.
[2] Nature, Jan. 10th, 1901.

A CASE OF SUBACUTE GLANDERS.

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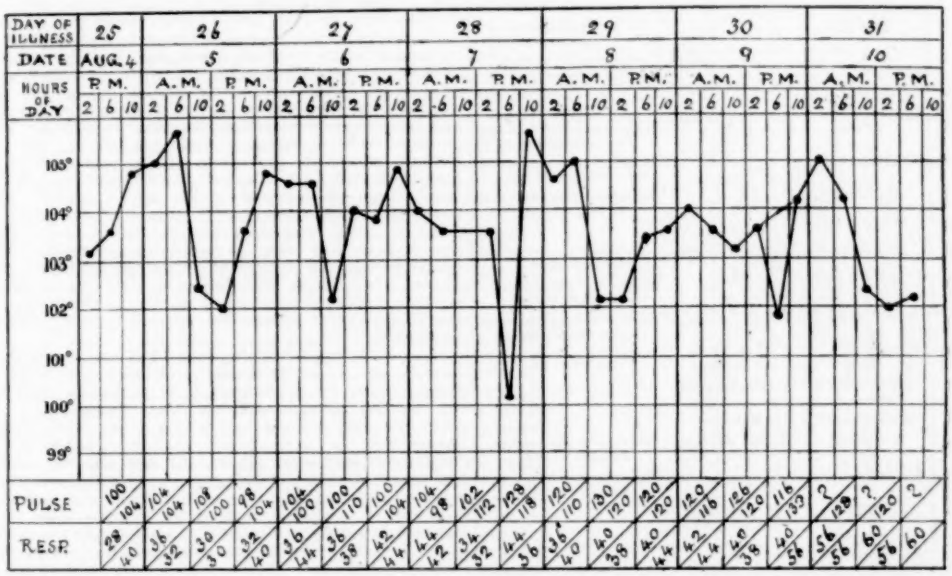
A MAN, aged 45 years, a cab proprietor, was admitted into Guy's Hospital on August 4th, 1900, under the care of one of us. Three weeks before he was taken ill a horse in his stables, supposed to have been suffering from glanders, had been killed. The patient first felt ill on July 9th, and between this time and the date of admission he had a small abscess on the left forearm, which was opened, and elsewhere on the body several other swellings which did not suppurate. During this period the patient was so ill that he had to remain in bed, his temperature being raised throughout, and on several occasions reaching 104° F.

On admission the patient, a big stout man, was obviously very ill. He was very tremulous, but breathing comfortably. His temperature was 103·2°, his pulse was 100, and his respirations were from 30 to 40 per minute. On the left forearm was a shallow sinus which led into the above-mentioned abscess cavity and from which exuded a little thin discharge. Over the back of the right elbow there was some cellulitis and also over the back of the first and second right metacarpal bones. A similar swelling was present on the inner side of the left knee. These swellings somewhat resembled patches of erythema nodosum. No fluctuation was detected in them nor any œdema of the surrounding tissue. A few mucous rales were heard over the bases of the lungs posteriorly. No physical signs were present on examination of any other of the organs. The urine did not contain albumin. There was no glandular enlargement and rhinorrhœa was not present. There was a small furuncle on the buttock, from which a cultivation was made. For the first three days after admission the condition of the patient did not materially alter, but on August 7th he

became distinctly worse and had recurrent attacks of difficulty in breathing, saying "he was sure he would be choked." On the 8th a crop of small papules, which became pustular, appeared on the back. On the 9th there were a few fresh papules on the right thigh. The left knee-joint was found to contain some fluid. During this day and the next the attacks of difficulty in breathing became more marked and the patient, becoming gradually worse, died on the after 48 hours its testicles were distinctly enlarged and inflamed. It was killed after four days and pus containing bacillus mallei was found inside the tunica vaginalis and small abscesses in the body of the testicle which on section were seen to contain characteristic bacilli. There can be no doubt, therefore, that the case was one of glanders. It was suspected before death that the bacilli which had been found were really glanders bacilli, but owing to the contamination



10th. The course of the temperature and pulse is shown on the accompanying chart. Cultivations were made from the furuncles, but up to the time of death no positive result had been obtained.

Necropsy.—The lungs were œdematous, but there were no nodules or any pneumonic areas to be seen. All the other viscera appeared normal to the naked eye and no foci of inflammation or suppuration were present anywhere in, or among, the viscera. The left knee-joint contained a thin, yellowish, glairy fluid and over the right elbow the tissues were infiltrated with a similar oily fluid. Cultivations were made from the heart blood, the spleen, and from the fluid in the region of the elbow and from the left knee-joint.

Remarks.—The case was one of subacute glanders of a month's duration. During life, although the history and some of the signs and symptoms suggested the possibility of glanders, yet the clinical evidence, in the absence of bacteriological proof, was not sufficiently clear to allow of a positive diagnosis of glanders being arrived at. Although the patient was very ill the local manifestations of the disease were slight and might have been those of a subacute pyæmia of other origin. They were (1) subcutaneous swellings, (2) a few small furuncles, (3) a small abscess in the left forearm, and (4) the presence of fluid in the left knee-joint. There were no typical ulcers of the skin, no well-marked bullous or pustular eruptions, no rhinorrhœa, and no intra-muscular abscesses, the presence of any of which would have helped to distinguish the case with more certainty as one of glanders.

Bacteriology.—The small furuncle upon the buttock was examined microscopically and culturally. Bacilli were seen in the pus which resembled the bacillus mallei, but the cultures were full of staphylococci and no bacillus mallei was found upon them. The heart blood, the spleen, and the fluid from the knee-joint were examined and mixed cultures containing a glanders-like bacillus were obtained. These were plated and pure cultures of the bacillus were obtained. The bacillus had all the typical morphological appearances and gave the staining and cultural reactions of the bacillus mallei. A small quantity of a glycerine-agar culture was inoculated into the peritoneum of a male guinea-pig and with other bacteria it was not proved. There would appear to be little doubt that had the abscess upon the forearm been examined bacteriologically the bacillus mallei would have been found. There seems also to be little doubt that had it not been for the bacteriological examination the case would not have been certainly diagnosed as one of glanders.

POSTERIOR BASIC MENINGITIS.

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THE disease which is known in this country by the name of "posterior basic meningitis" has always attracted much attention at the Hospital for Sick Children, where the names of Dr. S. J. Gee, Sir Thomas Barlow, Dr. D. B. Lees, and more recently of Dr. Still, are always associated with it. The last-named, while holding the post of registrar and pathologist, described a diplococcus which he had found constantly present in the meningeal exudations—a diplococcus which in most respects resembles the diplococcus intracellularis of Weichselbaum, the chief differences being the greater vitality of the organism found by Still and the fact that it grew well in broth media, whereas Weichselbaum's diplococcus did not grow at all or very slightly in such media. In the period, July, 1899, to August, 1900, there have been 17 cases of this disease in the medical wards at Great Ormond-street, or at least diagnosed as such, in 12 of which the diagnosis was verified by post-mortem examination. Of the remaining five patients two recovered; in two leave to make an examination was refused, and the fifth contracted diphtheria while in the ward and was transferred, owing to pressure upon our available beds, to the fever hospital. These cases, as will be seen later, do not all of them correspond to the

ordinary type of the disease, four of them being children much older than the average age, which Barlow and Lees state as 11 months.

List of Cases.

No. of case.	Age.	Result.	Remarks.
1	2 years.	Death; necropsy.	No bacteriological examination made.
2	5 months.	,, ,,	No bacteriological examination made.
3	4 ,,	,, ,,	Diplococci in exudate; no cultivations.
4	9 ,,	,, ,,	Diplococci in exudate and in cultivations.
5	4 years.	,, ,,	Diplococci in exudate and in cultivations.
6	11 months.	,, ,,	Nothing found in exudate; cultures sterile.
7	4 years.	,, ,,	Diplococci in exudate and in cultivations.
8	4 ,,	Recovery.	—
9	4 months.	Death; necropsy.	Diplococci in exudate; no cultivations.
10	8 ,,	,, ,,	No bacteriological examination made.
11	6 ,,	,, ,,	Diplococci in exudate and in cultivations.
12	8 ,,	Death; no necropsy.	—
13	9 ,,	Discharged *in statu quo*.	—
14	3 years, 6 months.	Recovery.	—
15	4 months.	Death; necropsy.	Diplococci in exudate; no cultivations.
16	1 year, 4 months.	,, ,,	Diplococci in exudate and in cultivations.
17	8 months.	Death; no necropsy.	—

Bacteriology.—Of the 12 cases in which a post-mortem examination took place three were not examined bacteriologically; in two cases the post-mortem examination was performed in my absence, and in the third the brain was hardened and preserved. In the remaining nine cases the meningeal exudation was examined by means of films of lymph taken from the collection at the base of the brain and from the lateral ventricles. An intracellular diplococcus was discovered in eight of these cases; in the ninth no organism of any description could be found. In all cases the diplococcus appeared to be the only organism present; no streptococci or pneumococci were discovered. In six cases cultivations were made on agar-agar and glycerine-agar media. Five of these proved successful, the diplococcus growing, however, scantily in all cases. The unsuccessful case was that in which microscopical examination had shown an absence of organisms; in this instance nothing grew upon the culture media. In Case 4 a lumbar puncture was performed during life, and the fluid was inoculated upon gar-agar. This gave a fairly typical growth of the diplococcus. Thus out of the nine cases examined in eight the diplococcus intracellularis was demonstrated in the exudate, and in five of these it was found in cultivations, being present, in pure culture in four; the fifth was I believe, accidentally contaminated, for it contained, besides typical colonies of the diplococcus, large growths of staphylococcus pyogenes aureus and streptococcus pyogenes.

Vitality.—The vitality of the organism in the meningeal exudation would seem to be very variable. Thus in one patient dying on the forty-second day of the disease it was found very scantily in the coverslips examined and grew in the culture-tubes in very few colonies, while in two other patients dying respectively about three months and eight months after the onset of the disease it was found in considerable profusion; in the second of these, however, it is possible that the patient died in a second attack, or a recrudescence of the original infection. In cultivations the organism did not live; in one case sub-cultures made from a 48-hours growth proved quite sterile, and in no case did there appear to be any vitality left in the colonies at the end of a week. Looking at Dr. Still's results I feel sure that mine are not trustworthy in this point, probably because the inoculations were not made with sufficient freedom; further, I have not employed a blood-agar medium, on which he found the organism to persist longest. In Case 4 the fluid obtained by lumbar puncture during life gave a fair growth of the organisms, but at death 15 days later there were very few colonies indeed in the cultivations, and I had to hunt through several films before discovering typical diplococci, so that the organism had apparently lost much of its vitality between the twelfth and the twenty-eighth days of the disease.

This question of the vitality of the organism is, of course, one of great importance, for Weichselbaum's diplococcus isolated from epidemic cerebro-spinal cases was stated by its discoverer to be possessed of extremely limited powers of endurance, while Dr. Still found that the diplococcus of posterior basic meningitis lived an average of three weeks, and, as he remarks, this difference is by far the most striking. In other points the two observers for the most part agreed. It is therefore interesting to note my failure in these cases to obtain a prolonged vitality and also Netter's statement, quoted from Dr. Osler's Cavendish Lecture of 1899, that Weichselbaum's diplococcus has been found living at the end of 60 days. On the whole it seems most probable that the organisms are practically identical, though apparently with slightly different qualities according as they occur in epidemics or sporadic cases.[1] I have had no opportunity of seeing any epidemic of the disease, though one of the series of cases in its clinical aspect approached more nearly to the epidemic type, as described by Osler, than to the chronic disease with which I am familiar.

Clinical features.—In this series 10 of the cases occurred in males and seven in females. Of the age at which the disease made its appearance it is noticeable that four of the 17 patients were in their fourth year and over, a much larger proportion than Sir Thomas Barlow and Dr. Lees found. In their series of 110 cases seven only were as old. It may also be observed here that these four cases all gave rise to considerable difficulty in diagnosis, and that two of them were cases that recovered, so that absolute proof of the correctness of the diagnosis is wanting. Excluding these four the average age of the patients attacked was nine months, the youngest being just three months old. The previous history and the family history of these cases bear out the statement of Barlow and Lees that there is no other affection which bears any constant relation to this disease. In the majority of cases it appears without any previous ill-health either in the patient or in those who surround him.

As regards the first symptom of the disease this series corresponds exactly with the analysis given by Sir Thomas Barlow and Dr. Lees. Vomiting occurred first in nine cases, convulsions in four, and head retraction in three. Bulging of the fontanelle is noted early in the course of the illness in six cases. Retraction of the head is one of the cardinal signs of the disease, and sooner or later appears in all cases. It occasionally, however, appears too late to be of much service in diagnosis and in two of these cases, Cases 1 and 5, it was not noted at any time. Further, there has been in the hospital during the period of time covered by this series a boy, aged 10 months, in whom retraction of the head to an extreme degree was constant, though at the necropsy there was no trace whatever of meningitis. It is also worthy of remark that this symptom was well marked in only one of the four older cases, whereas it was obvious in all but one of the remainder.

Ocular symptoms.—Strabismus was a fairly frequent and early symptom, as also was nystagmus, occurring in about half the cases; but the chief ocular symptoms, with one exception to be mentioned later, are to be sought by means of the ophthalmoscope, for 13 of these 17 cases showed definite changes in the fundus. In five cases there was pronounced swelling of the optic discs, which was very easily recognised and indeed could not be overlooked; in one of these there were in addition several flame-shaped retinal hæmorrhages. In four cases there was a peculiar grey discolouration of the optic disc, which appears to me to be peculiar to this disease. At any rate, I have never met with anything similar in any other illness. It is not atrophy, I venture to think, for the retinal vessels retain their normal size, and the disc does not appear hollowed, but it has an unusual opaque grey appearance quite unlike a normal disc. In the remaining four cases the changes were

[1] Since the above was written I have been successful in maintaining the vitality of the diplococcus up to the thirty-eighth day, at which period subcultures proved sterile.

such that I have not ventured to call them papilliitis, yet they are of that nature. In looking at these eyes with the ophthalmoscope regularly week by week, the optic discs which were at first absolutely normal became slowly more and more obscure, and in focussing accurately one could see that at the edge the finer vessels took a sharp curve, so that there was obviously some swelling, rarely more than 1 D, of the papilla, though the edge of the disc still remained distinct. This change, I believe, might easily have been overlooked if the discs had not been frequently examined.

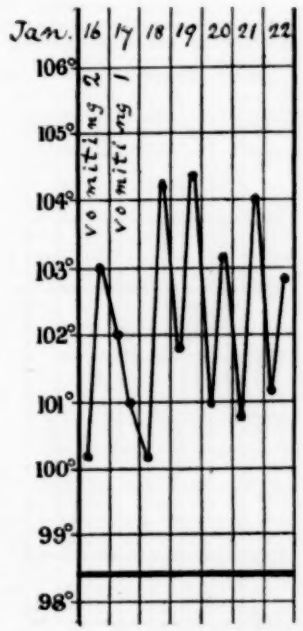
Amaurosis was noted in seven cases and was probably present in several others, but it is a symptom which is extremely difficult to ascertain with precision in young infants. The other important ocular symptom mentioned previously is retraction of the upper eyelid which occurred in seven of these cases. It is extremely characteristic of posterior basic meningitis, and, so far as I have been able to observe, extremely rare in any other form of meningitis. It is certainly very uncommon in tuberculous meningitis, for I can neither recollect nor find any record of its occurrence in the 26 cases of that disease which have occurred in the given period. Indeed, one might venture on an antithesis: in tuberculous meningitis there is photophobia and closure of the eyes, while in posterior basic meningitis the eyes are widely open with retracted upper lids as if seeking the light.

The other chief features of the disease—vomiting and progressive emaciation—were present in all cases, though in six cases the vomiting was slight. The emaciation was always pronounced and rapid even in the two patients who recovered, and apparently it is largely independent of any vomiting or diarrhœa that may be present, for in cases where these are absent the emaciation still progresses steadily. One month's duration will reduce the patient to mere skin and bone, in striking contrast to cases of tuberculous meningitis, which are not infrequently found possessed of considerable quantities of subcutaneous fat at the necropsy. The remaining features of the disease are with one or two possible exceptions those which are common to nearly all forms of meningitis; and though in nearly all of them there is some special point, which I believe to be to a certain extent indicative of the special form, yet these points are too uncertain to permit of any stress being laid on them. Thus there are the "champing" movements of the lips and jaws described by Sir Thomas Barlow and Dr. Lees, which are certainly more commonly seen in this form of meningitis than in any other, and yet are sufficiently often observed in tuberculous meningitis to render them devoid of any diagnostic significance. Hyperæsthesia of the skin, on the other hand, is distinctly more common in the tuberculous than in the posterior basic form. There are, however, two phenomena observed in the latter which do not, I believe, occur in the former. These are hydrocephalus and a joint affection. Hydrocephalus, of course, in a pathological sense is present in most cases of meningitis of whatever form, but in a few cases of posterior basic meningitis the head enlarges progressively and post mortem there is a very considerable excess of fluid. In only one, however, of the present series was there a clinical hydrocephalus. Careful measurements of the size of the head from time to time failed to show any enlargement. The joint affection has been fully investigated by Dr. Still who cultivated from the pus in the joints the same diplococcus which he found in the brain. None of the present series have had any joints involved.

It will be obvious from the foregoing brief summary of the symptoms that the diagnosis in the majority of cases is easy. The sudden onset, the characteristic head retraction, the chronic course, and the progressive emaciation render the disease, as a rule, easily recognisable. Yet of the present series seven of the cases presented difficulties more or less serious. The patient in Case 1 was supposed at one time to have a cerebral tumour, a diagnosis supported by the extensive optic neuritis and retinal hæmorrhages, combined with the absence of any head retraction. The necropsy showed the typical lesions of posterior basic meningitis and no trace of tumour formation. Case 5 was diagnosed confidently as a case of tuberculous meningitis, and the discovery of the true condition at the post-mortem examination was a surprise. Typhoid fever was suspected in Case 7 and Case 12, and in Case 4, Case 8, and Case 14 the diagnosis was delayed for some time. Three of these cases are worthy of a little further consideration.

CASE 7.—A girl, aged four years, previously in good health, was taken suddenly ill with headache and a "fit" on Jan. 8th, 1900. On the 9th she had a smart epistaxis. On admission on the 16th she was feverish, irritable, and decidedly ill, but apart from a slight stiffness in the cervical muscles had no sign of disease. Her temperature chart (Chart 1) was

CHART 1.



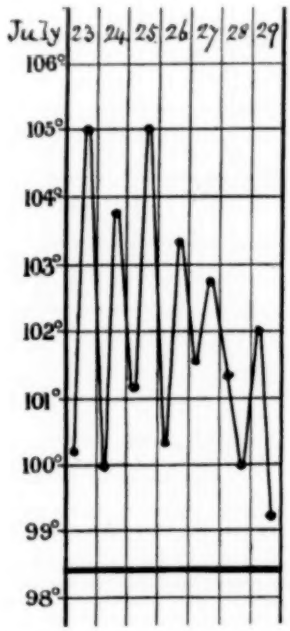
remarkably unlike that usually associated with posterior basic meningitis, in which disease, as a general rule, the temperature remains below 100° F., with occasional rises at very irregular intervals. It was not till two days before her death that the diagnosis was made with any certainty, though retraction of the eyelids had been noted on Feb. 2nd, a fortnight earlier. In this case typhoid fever was suspected, but repeated trials of Widal's serum reaction all proved negative. The course of the fever, the absence of any positive physical signs of disease, and the age of the patient all, I venture to think, combined to make earlier diagnosis impossible.

With this case Case 4 is comparable. This was a girl, aged nine months, who was brought to the hospital for diarrhœa and vomiting which began on July 16th, 1900. She was admitted on the 23rd and the only objective sign of disease was a slight stiffness of the neck and some retraction of the head, which had completely disappeared three days later. In this case the results of a cultivation made from the fluid obtained by lumbar puncture established the diagnosis at the end of the first week; but without this aid it would not have been possible to be sure of one's ground until the middle of the following week when the clinical picture was characteristic. The temperature chart (Chart 2) has at least a family resemblance to that of the preceding case.

The third case was, if possible, still more puzzling. A boy, aged eight months, was taken suddenly ill with "convulsions" on Dec. 31st, 1899. These were repeated on Jan. 1st and 2nd. He was admitted on Jan. 3rd and no diagnosis was made till near the end of the third week. Typhoid fever was again suggested and several other diagnoses were discussed. The child had no objective signs of disease except the fever and a slight rigidity of the cervical muscles. At the end of the third week, however, he presented the typical retraction of the head, and the subsequent course of the illness confirmed the diagnosis then made. His temperature chart (Chart 3) again illustrates a wide departure from the ordinary course of the disease.

As regards the temperature in these cases it is significant that they were all three admitted before the end of the first week of the illness. The majority of the cases come to the hospital much later, and it is possible that if they could be seen at an earlier period such charts would be far more common than they are at present. It is particularly interesting to compare the first two of these charts with that given by Dr. Osler in his Cavendish lecture, numbered Chart 4. That was obtained from one of the cases occurring in an outbreak of epidemic cerebro-spinal meningitis and the resemblance to the type here illustrated is extraordinarily close.

CHART 2.

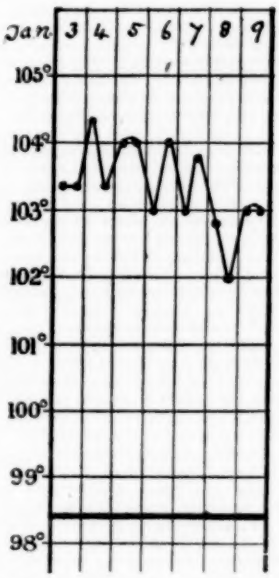


CASE 8.—This case was that of a boy, aged four years, and ended in recovery. He was admitted with a history of a sudden onset of vomiting and head retraction nearly a month previously. He had slight retraction of the head, well-marked optic neuritis, hyperæsthesia of the skin, and retracted abdomen with a well-marked tâche. He was quite conscious and even intelligent. His temperature was intermittent with a range of from four to five degrees for a week and then became very unsteady. Towards the end of the third week it became normal and he went out a few days later quite well. I have seen this patient three months later; he is very healthy and his intelligence seems in no way impaired. He still has a slight blurring of the optic discs, but there is no swelling, no loss of vision, and no evidence of atrophy.

The patient in Case 14, the other patient who recovered, has, I am afraid, left the country. He came over with his father from South Africa soon after the outbreak of the war, was suddenly taken ill with "convulsions" about Jan. 30th, 1900, and was admitted three weeks later. This case corresponded almost exactly in its clinical symptoms to the description given of epidemic cerebro-spinal meningitis, but was, so far as we were able to learn, quite an isolated case. He had irregular pyrexia, marked head-retraction, slight strabismus, marked hyperæsthesia, great irritability, and much tremor. He was never wholly unconscious, but he always knew his relations and even made efforts to speak to them. He had marked optic neuritis also and was the only patient in any one of these cases who had any skin eruption, having herpes covering both legs, portions of the thighs, and the lower part of the abdomen. His temperature came down rather suddenly to normal in the sixth week of his illness and remained there. The boy was discharged quite well at the end of the ninth week.

Before leaving the question of the diagnosis of the disease there are a few negative points to be mentioned. Blood-counts were made in several of the cases and in the early stages of the disease there was always a considerable leucocytosis; in the more chronic forms the white corpuscles have regained their normal standard. Of the different forms of meningitis the posterior basic form certainly in its active stage gives rise to a higher leucocytosis than tuberculous, but I have not yet had an opportunity of comparing it with pure pneumococcic meningitis. Kernig's sign, the rigid contraction of the flexors of the thigh, is, I believe, present in nearly all cases of posterior basic meningitis. It is, however, present also in cases in which there is no cerebro-spinal meningitis. I have recently found it well marked in two cases of lateral sinus thrombosis in which post mortem there was no meningitis at all. Lumbar puncture was used only once and then as a diagnostic measure. It is, to judge from the reports of our American and Canadian visitors, largely employed as a therapeutic measure in the United States and Canada, and with success. Osler, however, found that his epidemic cerebro-spinal cases derived no benefit from the procedure, and his experience seems to coincide with that of others. It is obviously quite useless late in the disease, and the only time at which removal of the cerebro-spinal fluid would appear to have any possible benefit is during the first week. It is possible that if tried only in cases which have not yet passed the seventh day from the onset the results may be more encouraging, and at any rate in such a disease any means of benefit is worthy of trial. All treatment of other kinds seems quite inefficacious, and pending the discovery of an antitoxin, lumbar puncture in a selected class of cases seems to hold out some faint promise. At the same time, it must be admitted that the pathological lesions found at the post-mortem examination are usually of such a character and in such situations that drainage by the spinal canal seems a wholly futile measure.

CHART 3.



In conclusion, it will be obvious from the foregoing account that posterior basic meningitis presents a considerable variety of clinical characters. In the majority of the cases which occur in children of under 12 months it is a very distinct and easily recognisable disease, but this rule does not hold invariably. On the other hand, a disease occurring in older children with many of the same symptoms and possessing the same pathological and bacteriological features, yet has certain characteristics which make it resemble very closely epidemic cerebro-spinal meningitis. Are the two identical, and are the special features of the epidemic disease

due merely to an exaltation of virulence in the organism? On the whole, and judging from the cases which I have seen, which unfortunately include no epidemic cases, I think the answer must be in the affirmative. The clinical symptoms obviously differ considerably without any corresponding alteration in the pathological or bacteriological features, and the main differences between the organism of Weichselbaum and the organism found in these cases in England seem to be quite insufficient to establish them as distinct species. If this view is accepted we shall henceforth look upon posterior basic meningitis as a disease comparable in certain points to pneumonia, which, while as a rule a sporadic disease, occasionally presents itself in epidemic form. The causes which determine this variation are in both cases still to be discovered. I have to thank Dr. Lees, Dr. Penrose, and Dr. Garrod for permission to make use of the cases which have occurred in their respective wards; and I also owe thanks to Dr. Still for much help and many suggestions.

Bentinck-street, W.

PRIMARY SARCOMA OF THE STOMACH

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DURING the last few years the opinion has been steadily gaining ground that many of the morbid growths of the stomach which have hitherto been regarded as carcinomata are really sarcomatous in character and that the clinical description of malignant disease of the viscus requires to be revised from a new pathological standpoint. This opinion is founded partly upon the discovery that many specimens which are described in museum catalogues as examples of carcinomatous or fibroid tumours present the characteristic features of round-cell or spindle-cell sarcoma when examined with the microscope, and partly upon the large number of cases of sarcoma of the stomach which have been published since special attention was directed to the subject. Thus, Perry and Shaw found four instances of sarcoma among 50 specimens of malignant disease of the stomach, while in the course of 23 consecutive necropsies upon persons who had died from primary neoplasms of the organ I observed two well-marked examples of round-cell sarcoma. It may also be noticed that whereas Schlesinger in 1897 was only able to collect 30 cases of the disease, in November, 1900, the number of published cases exceeded 60, of which 53 possessed sufficient details to permit of analysis. Although it is impossible to make any absolute statement as to the relative frequency of the disease it is probable the sarcomata constitute from 5 to 8 per cent. of all primary neoplasms of the stomach.

Gastric sarcoma may appear either as a primary growth or as a secondary deposit. The former is by far the most common if exception be made of those not infrequent cases where the organ is involved by a lympho-sarcoma. Six varieties of the primary affection have been described up to the present time—namely, round-cell sarcoma, spindle-cell sarcoma, fibro-sarcoma, myo-sarcoma, myxo-sarcoma, and angio-sarcoma. Of these the spindle-cell and the fibro-sarcomata are probably identical, while the single example of myxo-sarcoma appears to have been originally a case of the round-cell type which had undergone degeneration.

MORBID ANATOMY.

1. *Round-cell sarcoma*.—Round-cell sarcoma, or as it is often termed "lympho-sarcoma," is the variety most usually met with and was observed in 33 out of 53 cases, or in about 62 per cent. of the entire number. As a rule it presents itself in the form of a dense infiltration of the pyloric third of the stomach, which transforms the coats of this portion of the viscus into a homogeneous, yellowish-white mass of rigid consistence and considerable thickness. The peritoneal aspect is often covered with recent lymph, while the inner surface may be slightly uneven or distinctly nodular and is occasionally superficially ulcerated. If the pylorus is greatly thickened its orifice may be partially stenosed, as in cases of spheroidal-cell carcinoma, but as a rule the rigidity of its tissues renders it patent and the valve incompetent rather than contracted. The growth gradually shades off as it approaches the centre of the organ, but it is often prolonged for some distance along the curvatures in the form of thick striæ or bands. In almost every instance, whether the pylorus is stenosed or not, the cardiac portion of the stomach is dilated and its mucous membrane shows signs of chronic inflammation. In about one-sixth of the cases the entire organ was infiltrated by the new growth, which also tended to invade the first part of the duodenum and the lower end of the œsophagus. The walls of the viscus were greatly thickened and its cavity contracted, and its inner surface was sometimes extensively ulcerated. In only two instances out of the entire number did the disease appear as a circumscribed tumour in the wall of the viscus, with secondary nodules in the surrounding mucous membrane. On microscopical examination the disease is found to commence as a round-cell infiltration of the sub-mucosa, which subsequently spreads into the muscular coat through its interstitial connective tissue and finally destroys and replaces the contractile fibres. At first the mucous membrane is merely stretched by the subjacent growth and atrophies from pressure, but at a later stage it is often invaded by the disease and may undergo ulceration. Schlagenhaufer and Redtenbacher have shown that a diffuse infiltration of round cells in the mucous membrane may extend far beyond the apparent confines of the disease. Like the other forms of sarcomata, this variety is prone to undergo softening and degeneration, with the formation of small cavities in its substance or perforation of the wall of the stomach.

2. *Spindle-cell or fibro-sarcoma*.—This comes next in frequency of occurrence and constituted 12 out of the 53 cases, or 22 per cent. It presents itself as a round or oval circumscribed tumour of the wall of the stomach and it is usually situated near the great curvature. As it grows it projects more and more beneath the serous coat and exerts so much traction upon its point of origin that it not only drags the whole stomach downwards but often acquires a pedunculated appearance. These tumours sometimes grow to an enormous size (12 lb., Cantwell), and may fill the greater part of the abdominal cavity. When small they are smooth and firm on section, but as their bulk increases they often become knotty and irregular in shape, and their tissue undergoes cystic degeneration. These latter changes are seldom accompanied by the formation of adhesions, but occasionally give rise to perforation of the stomach (Ewald).

3. *Myo-sarcomata*.—These are much rarer than either of the preceding, only five examples having been recorded up to the present time. They form smooth or slightly nodular masses in the substance of the gastric wall near the great curvature and frequently show signs of cystic degeneration. Like the fibro-sarcomata, they may attain enormous dimensions, Brodowski having met with one which weighed 12 lb.

4. *Angio-sarcoma*.—This has been recorded twice (Bruch and Kosinski). In one case it formed a tumour of the size of an infant's head with many cysts due to interstitial hæmorrhages scattered through its substance.

Each variety is apt to give rise to secondary growths in organs more or less remote from the primary disease, but the round cell is by far the most malignant. Thus out of 23 cases of the latter in which full details are given, 16 or 70 per cent. are stated to have exhibited metastases. In almost every instance the lymphatic glands immediately connected with the stomach were enlarged and in nearly 50 per cent. they were sarcomatous; while in a few cases the retro-peritoneal, mesenteric, and even the mediastinal, cervical, and supra clavicular glands were affected. One or both kidneys presented secondary deposits in 28 per cent.; the liver, ovaries, pancreas, adrenals, and omentum each in 14 per cent.; and the lungs, diaphragm, pleuræ, œsophagus, intestines, and mesentery in about 7 per cent. of the cases. It is also important to notice that nodules of growth were present in the skin of the abdomen, thorax, or back in about 12 per cent. of the entire number. The spindle-cell variety was accompanied by metastases in the perigastric glands in 37 per cent. of the cases, and in the skin, liver, and diaphragm in about 12 per cent. of the cases, while in two out of the five cases of myo-sarcoma secondary growths were found in the liver.

A further study of the morbid phenomena of gastric sarcomata brings to light several other points of distinction between them and the carcinomata which may prove of service in their clinical differentiation. Owing to the infrequent infection of the peritoneum there is usually a notable

absence of the elongated and nodular epigastric tumour which is so often present in cancer of the stomach, owing to infiltration and adhesion of the great omentum. Again, in about 15 per cent. of the cases of round-cell sarcoma the spleen is so much enlarged as to project below the costal margin. This increase in size is not due to the existence of a morbid growth in its substance, but to congestion and hyperplasia of the splenic pulp—a condition which never occurs in carcinoma. Kundrat observed enlargement of the tonsils with occasional swelling and ulceration of the follicles of the tongue, and laid considerable stress upon their diagnostic significance. Perforation of the stomach followed by general peritonitis occurs far more often than in cases of cancer (11 per cent.), owing probably to the frequent softening of the morbid growth and to the absence of protective adhesions. On the other hand, localised perigastric abscess has not been observed up to the present. Death from hæmorrhage has only been recorded once (Robert), and in one instance the disease gave rise to a gastro-colic fistula (Chernjaeff). True carcinoma was twice found associated with round-cell sarcoma.

Secondary sarcomata of the stomach are usually lympho-sarcomatous in their nature and have been observed as the result of disease in the retro-peritoneal glands (Maier, Perry), cæcum (Beck), neck, pharynx, gums (Kundrat), rectum, superior maxilla, and in cases of general sarcomatosis (Malmsten, Carry). When the mischief spreads by contiguity the pyloric region is often affected in the same manner as in the primary affection, but when the original growth is more remotely situated the metastases usually appear as rounded tumours or thick wheals in the submucous tissue. These deposits often soften and ulcerate and may even undergo partial cicatrisation.

ETIOLOGY.

At present there are few facts that bear directly upon the etiology of the disease. The round-cell sarcoma seems to affect both sexes with equal frequency and to develop at any age. Nevertheless, there is a distinct tendency for it to occur at an earlier period of life than carcinoma, since the mean age of 29 cases was only 34 years. The spindle-cell variety, on the other hand, is five times as frequent in women as in men, the average age of the collected cases at the time of death being 51 years. The one recorded by Finlayson of sarcoma in a male child, three and a half years old, appears to be an exception to this rule, but the description of the microscopical features of the tumour is somewhat vague. The myo-sarcomata were usually met with in men in the prime of life. That a sarcoma, like carcinoma, is prone to attack scar-tissue in the stomach is well illustrated by a case published by Brooks, where a round-cell growth developed in the cicatrix of an old bullet wound of the lesser curvature. In a case which came under the writer's observation a large secondary melanotic growth was found in the base of a simple chronic ulcer situated near the pylorus.

SYMPTOMS.

The general symptoms of sarcoma of the stomach are essentially the same as those which accompany other forms of malignant disease. One of its earliest and most striking features is progressive emaciation with failure of physical power. This is usually most conspicuous in young persons and in cases where the growth causes early contraction of the pyloric orifice. When the neoplasm only affects a comparatively small portion of the viscus, as in the spindle-cell and myo-sarcomata, the loss of flesh is chiefly observed in the later stages of the complaint or after ulceration has taken place. Anæmia is always present and gradually becomes profound, but if there is continued fever or repeated hæmorrhage its progress is very rapid. It is characterised by a great diminution both of hæmoglobin and red corpuscles and in one of the cases recorded the colouring matter only amounted to 15 per cent. of the normal. Slight leucocytosis may sometimes be observed, but the increase of white corpuscles which normally occurs after meals (digestion-leucocytosis) is usually absent. As a rule the appetite is greatly diminished and there is a special distaste to meat, but occasionally the desire for food continues unimpaired throughout (Rasch, Baldy) or only declines during the last few weeks of life (Maass, Fleiner); thirst varies with the severity of the anæmia. When the neoplasm grows very rapidly or its tissues undergo degenerative changes the patient often exhibits slight but continuous pyrexia (from 99° to 101° F.). Albuminuria occurs in about one-sixth of the cases and is usually dependent upon secondary growths in the kidneys. If vomiting is a prominent feature of the case the bowels may be confined, but in many cases of the round-cell type diarrhœa is a noticeable feature.

With regard to the local symptoms which accompany sarcoma of the stomach it should be noticed in the first place that they may be entirely absent during the whole course of the disease. In the case related by Baldy the appetite continued good and there was no complaint either of pain or vomiting, although practically the entire stomach was involved in an enormous tumour. In another instance (Cantwell) where the growth weighed 12 pounds the digestive functions were apparently normal, while in that recorded by Robert the first and only indication of an extensive growth was an attack of hæmatemesis. In about 76 per cent. of all cases abdominal pain is experienced during some period of the disease. It varies greatly, however, both in its character and severity. As a rule it does not amount to more than a sense of fulness and oppression after meals such as ensues from gaseous distension of the stomach, but in 15 per cent. of the recorded cases it was described as having been severe and increased by the ingestion of food. It is interesting to observe that in most of these the body of the stomach was either extensively infiltrated or there was a considerable invasion of the pancreas or retro-peritoneal glands. The solid tumours (fibro- and myo-sarcomata) are more often accompanied by sensations of weight or dragging than by actual pain.

Vomiting is usually a later symptom unless the pylorus is contracted. At first it occurs at intervals, but as the stomach becomes dilated it is repeated more frequently and the ejecta are found to present the usual features which characterise stagnation and decomposition of the food. Vomiting occurring soon after meals and preceded by pain usually indicates ulceration of the growth, while the attacks of incessant retching, attended with the expulsion of mucus, which are apt to appear from time to time, and are often so severe as to preclude the administration of food, result from secondary inflammation of the mucous membrane. In the case of the large solid tumours vomiting is a less frequent phenomenon (48 per cent.) and seldom appears until after the lapse of from five months to seven months. Fæcal vomiting is usually an indication of a gastro-colic fistula.

Hæmorrhage from the stomach is seldom a prominent symptom of round-cell sarcoma owing to the comparative infrequency of ulceration of the growth. It is probable, however, that capillary oozing is of constant occurrence, since the gastric contents removed by a tube are often found to be mixed with coffee-ground material, while careful examination of the stools may demonstrate the existence of altered blood (Schlesinger). In the spindle-cell variety of the disease repeated attacks of hæmatemesis were observed in nearly half the cases, and in two instances a severe hæmorrhage was the first symptom to attract attention.

PHYSICAL SIGNS.

A palpable tumour connected with the stomach is an inconstant sign of round-cell sarcoma and was only observed in about 30 per cent. of the recorded cases. In most instances it is produced by a local thickening of the gastric wall in the region of the pylorus, and was described as a round or oval mass, occupying the right hypochondriac or epigastric region, smooth on the surface, somewhat tender upon pressure, and often freely moveable. Rapid increase in size can sometimes be observed. In other instances the tumour consists of the entire stomach and more than once the concomitant enlargement of the spleen has been mistaken for a malignant mass. In the fibro- and myo-sarcomata a tumour is almost always present and is often so large as to occupy the greater part of the abdominal cavity. If the growth is situated near the great curvature it is usually detected in the umbilical left hypochondriac or lumbar region, where it forms a smooth, firm, painless mass which is dull on percussion and freely moveable in all directions. This latter peculiarity affords a marked contrast to the behaviour of a carcinomatous growth in the same position, which is invariably fixed by extensive adhesions to the neighbouring viscera. In two cases where the tumour was attached to the posterior wall of the stomach it filled the lesser sac of the peritoneum and was consequently covered by the stomach and transverse colon, but being somewhat pedunculated it could easily be moved from side to side.

Dilatation of the stomach can be detected in every case of sarcoma of the pylorus, and when the orifice is contracted peristaltic movements of the enlarged viscus are usually visible. When the organ is affected by diffuse infiltration its cavity is contracted and its outlines are obscured by the transverse colon.

Metastatic deposits in the skin constitute an important feature of the disease. As a rule they appear in the form of one or two small nodules in or around the umbilicus, but occasionally they are very numerous and are scattered all over the abdomen, chest, and back. They vary in size from a millet seed to a small bean, and at first are freely moveable in the subcutaneous tissue; but after a time they become adherent to the skin and may even give rise to ulceration. Enlargement of the supra-clavicular and cervical glands is rarely observed, while sarcomatous infiltration of the tongue is still less common. In one case a correct diagnosis was made by the discovery of a secondary growth in the rectum. Generalisation of the disease is occasionally accompanied by the symptoms of purpura (Redtenbacher).

Chemical examination of the contents of the stomach affords similar results to those met with in gastric cancer. Free hydrochloric acid disappears at an early stage of the complaint (Fleiner, Schlesinger) and fermentation of the food often produces an excess of lactic acid (Dreyer, Maass, Hammerslag). Sarcinæ may or may not be present and Schlesinger was able to demonstrate the presence of the Oppler-Boas bacillus which is supposed to occur only in cases of cancer. The sulphocyanide of potassium in the saliva gradually diminishes as the disease progresses and finally disappears about one month before death.

DURATION AND COMPLICATIONS.

It is difficult to estimate the exact duration of a disease which commences so insidiously and is often unaccompanied by definite physical signs for many months. It would appear, however, from a study of the recorded cases that although the round-cell sarcomata often run their course in three or four months the average duration of the disease is about 15 months; while in the case of the spindle-cell and myo-sarcomata life is prolonged on the average for two years and eight months. It will be observed that in both instances the duration of the disease is greater than that of cancer, a result which probably depends upon its lesser malignancy and its lesser liability to produce ulceration of the mucous membrane and stenosis of the pylorus. Death usually occurs from exhaustion and is often preceded by a semi-comatose state lasting for several days. Perforation of the stomach followed by general peritonitis occurs in about from 10 per cent. to 12 per cent. of the cases of round-cell sarcoma and may even take place in the spindle-cell form (Ewald), but owing to the absence of adhesions a perigastric abscess is exceptional. Fatal hæmorrhage is very rare. In two instances general sarcomatosis tended to shorten the period of life, while in one an attack of tetany, similar to that met with in cicatricial stenosis of the pylorus, was immediately responsible for the fatal termination (Fleiner). Excessive ascites, albuminuria, portal thrombosis, and pneumonia all accelerate the natural course of the disease.

DIAGNOSIS.

So far as the recognition of the malignant nature of the disease is concerned the sarcomata do not offer any particular difficulty. The intractable character of the gastric symptoms, coupled with the progressive emaciation, physical debility, and cachexia, indicate a profound disturbance of the processes of digestion and assimilation, while the discovery of a growing tumour connected with the stomach or of metastases in other viscera demonstrates at once the existence of a neoplasm. A more interesting question is the clinical differentiation of sarcoma and carcinoma. A diagnosis of round-cell sarcoma of the stomach may often be made by attention to the following facts:—1. The disease usually occurs before 35 years of age, so that the younger the patient the greater the probability that the malignant affection is sarcomatous in character. 2. In many cases there is slight but continuous pyrexia accompanied by rapid and profound anæmia, while in carcinoma fever is always absent during the early stages of the complaint and the cachexia much more gradual in its development. 3. Simple enlargement of the spleen is by no means infrequent, but is never met with in cancer unless the organ is involved in the growth. 4. According to Kundrat the tonsils are apt to enlarge and the follicles upon the sides of the tongue may become swollen or ulcerated. 5. Secondary deposits in the skin occur in a notable proportion of the cases and permit of excision and microscopical examination. It should be remembered, however, that sarcomatosis has been met with in true cancer of the stomach (Leube). 6. A large nodular tumour due to infiltration of the omentum or a greatly enlarged liver with secondary growths in its substance are rarely met with. 7. Persistent albuminuria is often observed in sarcoma but is exceptional in cancer. 8 The discovery of pieces of morbid growth in the vomit renders the diagnosis certain (Riegel, Westphalen).

The spindle-cell and myo-sarcomata are chiefly characterised by their comparatively slow growth, the smooth, firm, and moveable tumour, the frequent absence of pain, vomiting, and anorexia, and the tendency to repeated hæmorrhage.

TREATMENT.

Many of the recorded cases have been subjected to surgical treatment with considerable success so far as the immediate objects of the operation were concerned. Török, Dock, Schopf, and others have removed considerable portions of the stomach affected by the round cell growth, and in at least one case (Schopf) there was no recurrence at the end of a year. The solid tumours are especially favourable for extirpation, as they are often pedunculated and involve a comparatively small area of the gastric wall. Hartley removed a large fibro-sarcoma and Kosinski a cystic angio-sarcoma with apparent success, while in Cantwell's case the excision of spindle-cell sarcoma weighing 12 lb. gave great relief to the patient for eight months. If one may judge from the morbid anatomy of the disease the surgical treatment of sarcomata of the stomach will prove far more successful than can ever be expected in carcinoma, but it is too early yet to discuss the prospects of a permanent cure.

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Devonshire-street, W.

FOREIGN BODY IN THE ABDOMEN.

BY ERNEST H. ELLISON, M.A., M.R.C.S. ENG., L.R.C.P. LOND.

As illustrating the importance of the well-known axiom that all instruments and sponges should be counted prior to performing operations in the interior of the abdomen I append the following case which occurred in my practice recently.

A man, aged 49 years, sent for me in consequence of severe pain which he referred to the region of the umbilicus. This on examination proved to be due to the presence of a foreign body which protruded through the integuments about three inches below and to the left of the umbilicus. All efforts to remove the foreign body without a cutting operation—to which the patient refused his consent—being futile I succeeded in breaking off the most dependent portion of what on inspection presented the appearance of being the blades

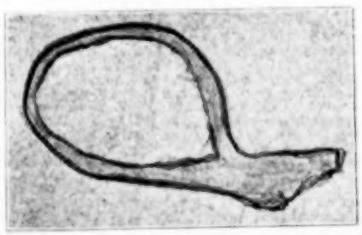
of a pair of catch forceps. The button portion uniting the blades was clearly visible, one half of the blades showing what I presume to be corrosion from the action of the intestinal juices upon it, and judging from the worn and eaten appearance of the extremity of one of the blades this must evidently have occurred. The fact of a foreign body of the above description having been discovered in the situation described points to an omission on the part of some practitioner to count his instruments prior to performing an abdominal operation eight and a half years ago—this being the period of time, according to the patient, since an operation was performed upon him for an internal strangulation. The statement seems probable enough from the presence of a clearly defined scar situated above Poupart's ligament in the right inguinal region.

FIG. 1.

Shows the first part of the forceps removed. Exact size.

I may, in conclusion, add that there is every evidence of the remaining part of the forceps being still in the cavity of the abdomen; and meanwhile, in the hope that I may one day obtain the patient's consent to remove the shaft and handles of such an instrument, I annex a photograph showing the exact size of the portion in my possession.

FIG. 2.



Shows the second part of the forceps removed. Exact size.

P.S.—Since forwarding to you the above article I have been fortunate in obtaining last week another portion of the instrument of which I inclose a rough sketch (Fig. 2).

Syston, Leicester.

A CASE OF CEPHALHÆMATOMA.

BY HUGH HOWIE BORLAND, M.B., C.M. GLASG., D.P.H. CANTAB.,

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ON April 23rd, 1900, I was called to the third accouchement of a woman, aged 33 years. The first labour pain came on at 10.30 P.M.; two pains ruptured the membranes with the escape of liquor amnii. On my arrival two hours later I found the os fully dilated. There was no pelvic contraction or deformity. Presentation was first cranial. One strong pain set in bringing the head right on to the perineum. Forceps were not used. The labour (two and a half hours) was rapid but easy throughout. The child cried lustily when born. I saw the infant washed and it looked natural and healthy. The scalp showed no caput succedaneum or other evidences of pressure. The shape and size of the head appeared normal in every way and with no trace of injury. The nurse, eight hours later, however, observed that the head had become swollen on both sides. I found next day a somewhat rounded circumscribed swelling over the right parietal bone raised up at and bulging over the lambdoidal suture posteriorly and limited anteriorly by the fronto-parietal suture. The elevated bulk of the tumour was over the posterior and superior angle of the parietal bone. Over the left parietal region was found another swelling smaller, more diffusive, less elevated, and not circumscribed. On the second day the child's face was pale and waxy, the lips and conjunctivæ were anæmic, and the skin was devoid of the newly born healthy rosy colour. The two swellings had still further increased in size, the head presenting a characteristic bicornate square appearance from the superimposed tumours which occupied the greater part of the two parietal bones respectively. The right tumour exceeded the left in length by one and a half inches. Both swellings were fuller and more rounded at the outer aspect with a gradual symmetrical tapering flatness towards the sagittal suture giving rise to a V shaped depression running antero-posteriorly. The scalp area, normally situated over the posterior fontanelle, was deviated fully one inch outwards and forwards; neither the lambdoidal suture nor the posterior fontanelle could be demarcated. The right tumour had a reddish tint with no discolouration; it was slightly tense, rounded, circumscribed, and fluctuant, not increased in size when the child cried; its volume was not diminished on pressure, nor were stupor, coma, or convulsions induced, but several occipital glands were enlarged from pressure on the lymphatics. There was also distinct protrusion of the anterior fontanelle. On the third day the presence of a bony circle could be made out at the periphery of the right tumour limiting the effusion; discolouration over this tumour had now supervened. The left tumour had no red tint and no fluctuation obtained. No bony circle was found but the tumour pitted on pressure. Icterus neonatorum developed. On the fourth day there was an extension of ecchymosis over the swelling, which was smaller, less tense, but more fluctuant. The contour of the head had assumed a more natural shape. The left tumour subsequently decreased more rapidly than the right and was at no time discoloured; the œdematous pitting suggested epicranial cephalhæmatoma while the tumour on the right was obviously sub-pericranial. On the fifth day the protrusion over the anterior fontanelle had disappeared but the sulcus in the median line was still well marked. On the twelfth day the right swelling was greatest over the parieto-temporal region and was still dark in colour and glazed. No effusion crossed the sagittal suture but the great veins were now engorged and prominent. By the eighteenth day the right tumour was only half the size it presented on the third day, measuring now five inches antero-posteriorly and transversely four inches. The left tumour disappeared entirely on the twentieth day, while the right persisted till June 2nd, 40 days after birth, when all swelling of the scalp had vanished.

During the first week the child shivered and trembled occasionally. There was no development of strabismus or paralysis. The treatment was entirely passive, and it was noteworthy that the presence of these tumours was seen to be quite compatible with the health of the child with the exception of anæmia and constipation. The child slept well and fed well. There was no elevation of temperature, no dyspnœa, and no cerebral complications. There was no history of hæmophilia, but the other children are very fair and I can only suggest that there may have been tenuity of the walls of the blood-vessels and that rupture of these occurred when a portion of the head was constricted by the os uteri and thus eventually led to the effusion of blood which I have described.

Glasgow.

FREEMASONRY.—*The Rahere Lodge, No. 2546.*—An ordinary meeting of the Rahere Lodge, No. 2546, was held at Frascati's Restaurant on Feb. 12th, W. Bro. Walter Gripper, M.B., W.M., in the chair. Bros. Hepburn and Bokenham were raised to the third degree, and Bros. Ware, Whitaker, and Beadles were passed to the second degree. A grant of 15 guineas was made to a professional brother in urgent distress, a donation of one guinea was given to the maintenance of "Our Brother's Bed" in the Home for the Dying, and a sum of 20 guineas was voted to the Royal Medical Benevolent College at Epsom, on the proposition of W. Bro. E. C. Cripps. In consequence of the much-lamented death of Her Majesty the Queen there was no banquet after the meeting, but a few members of the Lodge dined together informally.

PRIMARY CARCINOMA OF THE AMPULLA OF VATER, WITH REPORT OF A CASE PRESENTING SOME SPECIAL FEATURES OF INTEREST.

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PHYSICIAN AND LECTURER ON PATHOLOGY AT ST. GEORGE'S HOSPITAL; SENIOR PHYSICIAN TO OUT-PATIENTS, VICTORIA HOSPITAL FOR CHILDREN.

NORMALLY, before opening into the duodenum, the common bile duct and Wirsung's duct of the pancreas open into a common channel inside the biliary papilla. This short duct is called the ampulla or diverticulum Vateri. Normally its mucous membrane is rougher and more villous than that of the common bile duct, but the so-called ampulla of Vater is little, if at all, larger than the common bile duct except when pathologically dilated by an impacted gall-stone. Carcinoma may start in the mucous membrane lining this ampulla of Vater, as in the case I record in this paper. Carcinoma may spread into the ampulla from the lower end of the bile duct and possibly from the termination of Wirsung's duct. In a paper on primary carcinoma of the larger bile ducts published in 1896 I came to the conclusion that most cases of so-called carcinoma of the ampulla of Vater originated in the termination of the common bile duct;[1] later in the year R. Durand-Fardel[2] showed a specimen supporting this and adopted the same view. The clinical aspects of the two are identical and the histological structure of the growths in the two situations is the same—viz., a columnar-celled carcinoma. Their pathological effects, however, may differ; thus carcinoma of the ampulla of Vater may obstruct Wirsung's duct and so lead to cystic dilatation with fibrosis of the pancreas, while carcinoma of the termination of the common bile duct is not so likely to do this. Pic[3] regarded carcinoma of the ampulla of Vater as an aberrant form of pancreatic carcinoma corresponding apparently to the excretory type (columnar-celled) of pancreatic carcinoma described by Bard and Pic.[4] This is practically saying that carcinoma of the ampulla of Vater is carcinoma of the termination of the pancreatic duct. While admitting that carcinoma might spread to the ampulla of Vater from the termination of the common bile duct or from Wirsung's duct, Hanot[5] insisted on the occurrence of primary carcinoma starting in the lining membrane of the ampulla and has described two cases. He spoke of it as "cancer du pylore pancréatico-biliare," and instanced it as an "orificial cancer."

Primary carcinoma of the ampulla Vateri, or, as it might more conveniently be called, the choledocho-pancreatic duct, must be also distinguished from primary carcinoma attacking the mucous membrane covering the duodenal surface of the biliary papilla. Specimens of this form of duodenal carcinoma are to be found in the museums of St. Bartholomew's, Guy's, and St. Thomas's Hospitals. This lesion seems to be especially prone to lead to infective cholangitis and intra-hepatic suppuration. Carcinoma of the ampulla of Vater must thus be distinguished from carcinoma (1) of the termination of the common bile duct; (2) of the termination of Wirsung's duct; and (3) of the duodenal surface of the biliary papilla. The accompanying diagram illustrates these distinctions. Confusion may also occur between carcinoma of the head of the pancreas and primary carcinoma of the ampulla Vateri. Histologically they differ; carcinoma of the pancreas is spheroidal-celled, while carcinoma of the diverticulum Vateri is columnar-celled.

It may be difficult to decide where the growth started when the tumour has had time to spread and invade adjacent parts. Thus in some instances doubt will arise whether the tumour arose in the lower end of the bile duct, in the ampulla of Vater, or in the head of the pancreas. In forming a decision from a naked-eye examination in such cases it may be pointed out that carcinoma of the ampulla of Vater may, when of considerable size, project as a tumour through the gaping lips of the biliary papilla and be visible in the duodenum; this is not met with in carcinoma of the pancreas or of the termination of the common bile duct.

The clinical characters of primary carcinoma of the ampulla of Vater are the same as those of primary carcinoma of the common bile duct—viz., progressive jaundice and wasting, the patient finally passing into a condition of cholæmia or biliary toxæmia. It thus very closely resembles cases of carcinoma of the head of the pancreas. The only difference is that jaundice is exceptionally absent in malignant disease of the head of the pancreas. The treatment has so far been palliative except in one case where Halsted[6] successfully removed a columnar-celled carcinoma

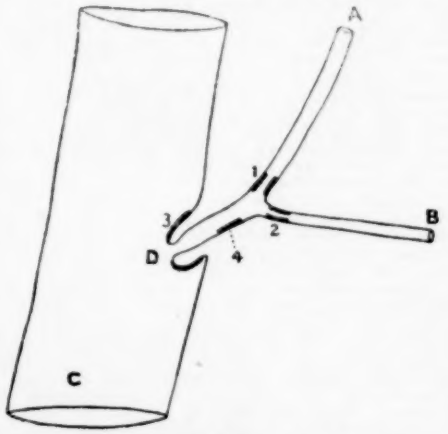

Diagram of the ampulla Vateri, showing the various situations where carcinoma may arise in relation with it and in its neighbourhood. A, Common bile duct. B, Wirsung's duct. C, Duodenum. D, Biliary papilla. 1. Carcinoma of the termination of the common bile duct. 2. Carcinoma of the termination of Wirsung's duct. 3. Carcinoma of the duodenal surface of the biliary papilla. 4. Carcinoma of the ampulla Vateri itself.

of the ampulla of Vater, but the growth recurred in the head of the pancreas and in the duodenum, and proved fatal within a year of the operation. Busson,[7] in 1890, collected 11 cases of carcinoma of the ampulla, and in 1896 Vincent-Georges,[8] a pupil of Hanot, added nine more; later in the same year Hanot[9] described another case. Of these 21 reported cases about seven are above suspicion; most of the remainder are either carcinoma of the termination of the common bile duct or of the duodenal surface of the biliary papilla. It is, therefore, a rare condition. The following case is recorded as an example of primary carcinoma of the ampulla Vateri with some special points of interest.

Carcinoma of the ampulla Vateri; dilated common bile and Wirsung's ducts; death from hæmorrhage into the dilated duct of Wirsung.—A man, aged 66 years, was admitted into St. George's Hospital under my care on July 22nd, 1900, with jaundice, pruritus, weakness, and wasting. Ten weeks previously he had considered himself quite well, jaundice then appeared quite painlessly, and a month later he got weaker and felt drowsy; six weeks after the onset of jaundice the skin began to itch. There was no history of gall-stones. When examined on admission he was deeply jaundiced and the skin showed the effects of scratching; the liver was enlarged, reaching to the fourth rib above and extending two and a half finger-breadths below the costal arch in the right nipple line, the surface was smooth, and the gall-bladder could be indistinctly felt. No splenic enlargement could be made out. There was some abdominal distension but no ascites. There was tenderness at a spot over the eleventh and twelfth ribs in the right hypochondrium. Per rectum nothing but an hypertrophied prostate could be felt. The urine contained albumin and bile but no sugar. The

[1] Medical Chronicle, January, 1896.
[2] Presse Médicale, June 17th, 1896.
[3] Revue de Médecine, 1895, p. 7.
[4] Ibid., 1896, p. 394.
[5] Archives Générales de Médecine, vol. clxxviii., p. 547, Nov. 1896.
[6] Johns Hopkins Hospital Bulletin, No. 106, January, 1900.
[7] Thèse de Paris, 1890.
[8] Thèse de Paris, No. 404, 1896.
[9] Loc. cit.

patient had been sent up to the hospital as a case of cancer of the liver; it appeared probable, however, that the growth was in the head of the pancreas. On July 25th there was some diarrhœa; on July 26th he vomited, had a rigor, and the temperature fell to 96° F., the pulse was small, and he was collapsed. The abdomen moved well and it appeared unlikely that perforation of the gall-bladder from over-distension, as in a case recorded by Coats and Finlayson,[10] had occurred. Suppuration around the gall-bladder was thought of, but his condition precluded any surgical treatment and he was given morphia. Death occurred 18 hours after the onset of acute symptoms.

At the *necropsy*, performed by Dr. W. J. Fenton, the peritoneal cavity showed no recent peritonitis but contained two parts of bile-stained fluid. A flat growth was found limited to the ampulla of Vater and occluding the orifices of both the common bile duct and the duct of Wirsung. This growth was not visible from the duodenum and was only seen when the papilla was opened up. Microscopically the growth was a columnar-celled carcinoma and was found to be invading the smooth muscular tissue around the ampulla Vateri. The common bile duct was greatly dilated with dark bile and was as thick as one's thumb. When the finger was introduced into the duct and directed downwards towards the biliary papilla the common duct was felt to end blindly like a test tube. The hepatic, cystic ducts, and the gall-bladder were greatly dilated; no gall-stones were found. The liver weighed 4 lb.; it was enlarged, smooth on the surface, and deeply bile-stained. Microscopically there was no cirrhosis, though the atrophied and degenerated condition of the liver cells allowed the existing fibrous tissue of the portal spaces to appear more prominent than in health. Wirsung's duct was tortuous and dilated throughout the whole of the pancreas; in the head of the gland there was a large cystic dilatation of the duct which contained recent blood-clot; the rest of the dilated duct contained dark brown fluid. No calculi were seen. The tail of the pancreas was adherent to the stomach by old adhesions, evidently the result of past inflammation. To the naked eye the pancreas was extremely fibrotic. Microscopically the glandular tissue of the organ was widely replaced by fibrous tissue and, where it could be made out, was much disorganised. Numerous dilated ducts were seen, some of which contained microscopic calculi. There was some recent small cell infiltration. The stomach and intestines showed signs of recent catarrhal inflammation. The kidneys presented senile changes and a few cysts. The heart weighed 11 ounces and was normal for the time of life. The lungs were emphysematous. No secondary growths were found in any part of the body.

The additional points of interest are:—1. The sudden onset of acute symptoms, followed by death in 18 hours. The preliminary diarrhœa, taken in conjunction with the signs of catarrhal inflammation found after death, make it probable that an infective gastro-enteritis set up inflammation in the chronically inflamed pancreas, and that acute pancreatitis, with the resulting hæmorrhage into the dilated duct, accounted for the severe collapse and death. 2. The extremely fibrotic condition of the pancreas appeared to be too advanced to be accounted for by obstruction of 11 weeks' duration. It is probable that, if the chronic pancreatitis was due to obstruction of Wirsung's duct, the growth must have interfered with the duct of Wirsung for a considerable period before it set up biliary obstruction. 3. It is noticeable that with such extreme fibrosis of the pancreas there was no glycosuria or diabetes.

Upper Brook-street, W.

ON THE USES OF FORMALIN IN GLYCERINE.

BY ALFRED C. JORDAN, B.A., M.B., B.C. CANTAB., L.R.C.P. LOND., M.R.C.S. ENG.,
HOUSE PHYSICIAN, ST. BARTHOLOMEW'S HOSPITAL.

FORMALIN is so powerful an antiseptic that its use for clinical purposes has tempted many, but in every case, so far as I know, the attempt has been abandoned on account of the irritating nature of formalin and the pain which its use has involved. I have found that this difficulty can be to a great extent overcome by using glycerine instead of water as the medium by which to convey the formalin to the required part. For 10 months I have used a mixture of formalin in glycerine, from 1 to 4 per cent. Although the mixture will keep without much diminution in strength for several weeks in a well-stoppered bottle in a cool place, it is better to prepare it fresh for use each time by mixing from one and a half to five minims of formalin with two fluid drachms of pure glycerine. This preparation is useful in at least four different ways—(1) as an application to the throat; (2) as a mouth-wash; (3) as an application to the skin; and (4) as a urethral injection.

1. *As an application to the throat.*—An ordinary pharyngeal brush is employed. A single application can be absolutely relied upon to kill every micro organism with which it comes in contact. My bacteriological examinations prove this. The glycerine spreads readily over the surface beyond the immediate limits of its application; it conveys the formalin into the follicles of the tonsils and into the deep layers of the mucous membrane. In follicular tonsillitis in the early days, while there are no deep collections of pus, formalin in glycerine (2, 3, or 4 per cent.) is a specific. After a single thorough application the temperature falls to normal within a few hours, and remains normal. The application is usually attended by a little soreness lasting only a few hours. For from half an hour to an hour after the treatment the patient should not be allowed to drink, the formalin being left undisturbed to exert its bactericidal action. After this a simple gargle, such as chlorate of potash, is all that is necessary. In diphtheria, in cases where the membrane is confined to the pharynx, formalin in glycerine is equally successful. In most cases, however, there is membrane in situations inaccessible to a brush: in the nares or in the air-passages. In such cases formalin in glycerine is of little use. In scarlet fever, where the throat condition is but a small part of a general disorder, one cannot expect much good from formalin; but even here 2 per cent. of formalin in glycerine every second or third day is certainly as good as any other local application with which I am acquainted.

2. *As a mouth-wash.*—In aphthous stomatitis and in parasitic stomatitis (thrush) a single application of formalin in glycerine, 2 per cent., should be made, and followed by the use of the glycerinum acidi borici of the British Pharmacopœia. In ulcerative stomatitis a single application does not appear to do much good and I am not convinced that formalin always accelerates the healing of the ulcers to an appreciable extent. Combined with iodine and with β eucaine (the latter as a local anæsthetic) in the following proportions, a useful mouth-wash is afforded: 1 per cent. of formalin, 2 per cent. of iodine, and 2 per cent. of β eucaine, in glycerine. With this and the internal administration of chlorate of potash good results are obtained. In gangrenous stomatitis (cancrum oris) I have not had an opportunity of trying formalin, but I believe that at the commencement 4 per cent. formalin in glycerine might penetrate sufficiently deeply to put a stop to the disease. Tuberculous ulcers of the pharynx, mouth, tongue, and lips, occurring as they do in the broken-down subjects of advanced phthisis, are never hopeful cases to treat. They are always liable to re-infection from the lungs and therefore repeated applications are necessary. But these repeated applications are not well tolerated on account of the great tenderness of the ulcers. In one case of tuberculous ulcer of the lower lip I was able to apply 4 per cent. formalin in glycerine very thoroughly twice a week by previously placing in contact with the ulcer a piece of absorbent wool soaked in β eucaine 4 per cent. In the intervals the ulcer was protected as far as possible by boric ointment. Considerable improvement occurred by the end of a fortnight, but I was not able to keep the patient under observation.

3. *As an application to the skin.*—Formalin may be thus employed in all parasitic diseases, but especially in tinea tonsurans (ringworm). The whole area is thoroughly cleaned by means of turpentine, followed by soft soap and water to remove grease, and 4 per cent. formalin in glycerine is rubbed carefully in by means of a piece of lint soaked in it. If there is much inflammation a piece of lint soaked in the formalin and glycerine is simply applied to the surface and left so for a few hours, protected by a layer of wool. This application never requires to be repeated. A little boric or zinc ointment or lead lotion will complete the cure in a few days. I have never known this to fail. Some cases of lupus ought to be readily curable by a few applications of 4 per cent. formalin in glycerine on lint. I have not yet, however, had opportunities of testing this important point.

[10] Glasgow Medical Journal, vol. xxxiv., August, 1890.

4. *As a urethral injection.*—In one case of acute gonorrhœa I injected one and a half drachms of 1 per cent. formalin in glycerine, with the result of completely and permanently curing the case. But for three days after the injection there were considerable pain and difficulty of micturition, due, no doubt, to swelling of the mucous membrane. For this reason I am not confident in recommending its general use as a urethral injection.

Other uses of formalin in glycerine will doubtless suggest themselves to the reader.

St. Bartholomew's Hospital, E.C.

MATERNAL IMPRESSIONS IN LOWER LIFE.

BY ANDREW WILSON, F.R.S. EDIN., &c.

RECENT articles in THE LANCET have directed attention anew to the subject of maternal impressions. I am one of those who believe, on scientific evidence, of the possibility of the state of the mother mentally and otherwise affecting the fœtus. Therefore the following incident may prove interesting to biologists and medical men at large.

In a letter dated from Port Elizabeth, South Africa, and dated Dec. 15th last, a correspondent, Mr. David Lumsden, gives the case of a kid taken from a bush-buck ewe (*Tragelaphus sylvaticus*) killed in the "elephant bush" distant about 40 miles from Port Elizabeth. In this district numerous elephants are found. The kid (Fig. 1) of which a photograph was inclosed in the letter of my correspondent, is seen to possess an elephantine head and proboscis, while the tail is also of the proboscidean rather than of the antelope type. By way of comparison I have reproduced the antelope itself (Fig. 2) from the drawing in Wood's "Natural History." If one may suppose that the pregnant ewe was frightened by an elephant the deformity of the kid may be explained—that is, if we admit the possibility of maternal impressions acting on the unborn young. Teratologists may be able to refer the deformity to some type or other independently of such an explanation, but if the maternal impression view be adopted the human element, which is credited with explaining things on the *post hoc* principle, must of course be entirely eliminated from such a case as that before us. In other words, there is here no anxiety about the young before birth

FIG. 1.

FIG. 2.

and no discounting beforehand how the young might be deformed in consequence of some real or supposed fright or injury received by the mother.

Edinburgh.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

CHILDREN'S HOSPITAL, BIRMINGHAM.

A CASE OF CYSTINURIA WITH FORMATION OF CALCULI.

(Under the care of Mr. GAMGEE.)

THE presence of cystin in the urine may always be taken to indicate the occurrence of an abnormal breaking down of albumin, either in the alimentary canal, as in most cases, or in the tissues of the body, as occurs in acute yellow atrophy of the liver. Cystin calculi are usually single, but occasionally, as in Mr. Gamgee's case, many of these calculi may be present.

A boy, aged 12 years, was admitted into the Children's Hospital, Birmingham, on Oct. 20th, 1900, complaining of the frequent passage of calculi per urethram. The patient was sent into the hospital by Dr. E. A. Sadler of Ashbourne, who has supplied many details of the history.

The family history showed that the patient comes of a long-lived family. His paternal grandfather died at the age of 63 years from heart disease. His paternal great-grandfather died when he was 80 years of age from "stoppage of the water," but there is no history of there having been a vesical calculus present. His paternal grandmother is still alive, aged 70 years, and is always in good health. The patient's father has six brothers and four sisters, all alive and well. The grandfather and grandmother on the mother's side are still living; they are over 70 years old and are always well in health. There is no history in the family of phthisis, gout, or rheumatism, except that a sister of the patient's mother died, when she was 21 years old, her relatives saying that at the time of her death she was "a bit consumptive." The patient's father and mother are alive and well.

As regards the patient's personal history he had bronchitis during his first dentition and his tonsils have been enlarged for some years. He has had no other illness. There is no point of importance about the patient's diet. Two years ago the patient, for the first time, passed a small stone per urethram, and he has done this four times since, passing one stone each time. The father and mother are quite certain that the stones passed on these occasions were quite different from those passed a few days before the boy was admitted into the hospital, for they were very gritty, were yellow in colour, and had a rough surface. During the week previously to admission the patient passed eight small calculi, the passage of them being very painful and causing retention of urine. These stones are very small, are yellowish-white in colour, have a smooth surface, and together weigh two grains. The quantity of urine passed in 24 hours varied from 34 to 44 ounces and the quantity of urea varied from 374 to 484 grains. There was neither albumin nor sugar present. On standing the urine deposited a slight sediment, which was found to contain many typical hexagonal crystals of cystin.

On Oct. 23rd the patient was sounded and another calculus was found. This, after being removed by suprapubic cystotomy, was found to weigh eight grains and to be oval in shape. Its surface was in one part exactly like those of the smaller calculi already described, but the greater part of the surface was covered with glistening yellow crystals. The patient made a good recovery after the operation. Scrapings from the calculi were dissolved in ammonia solution. On evaporation of the liquid hexagonal crystals of cystin were deposited.

Remarks by Mr. GAMGEE.—Cystinuria is undoubtedly in some cases hereditary, but in this instance the family history has been inquired into very carefully and no trace of the affection in other members of the patient's family has been met with. At times, too, cystinuria is present in patients who either are themselves the subjects of tuberculosis or who come of a tuberculous family, but here again in the case now under review the history is negative. Urine containing cystin is said to decompose rapidly and to contain only a small amount of urea, but rapid decomposition was not noticed in this case and, as has been stated, the amount of urea passed was well up to the average. The parents' statement as to the character of the calculi previously passed is curious. The passage of cystin calculi usually recurs at intervals, and it seems unlikely that this patient passed calculi sometimes of cystin and sometimes of some other material. The causation of cystinuria is obscure, but the condition is probably due to the presence in the intestines of certain specific micro-organisms producing an abnormal decomposition of proteid matter.

DEVIZES HOSPITAL.

A CASE OF PERFORATED GASTRIC ULCER WITH OPERATION AND RECOVERY.

(Under the care of Dr. H. MACKAY.)

THE manipulations necessary for the suture of a perforated gastric ulcer on the posterior wall near the cardiac orifice are much facilitated by an additional incision of the abdominal wall towards the left ribs; yet even with this the operation is never easy. All records of operation for perforating ulcer of the stomach are of value and enable more exact ideas to be formed as to the diagnosis and treatment of this condition. Dr. Mackay's case recorded below illustrates the value of sponging in removing the effused gastric contents.

A domestic servant, aged 17 years, was seen by Dr. G. C. Phillips on the afternoon of Nov. 23rd, 1900. She was very ill and complained of severe pain in the epigastrium and right hypochondrium. She had been faint and violently sick. The pain had come on suddenly while she was at work about one o'clock on the same day. With the pain came a sudden feeling of faintness and sickness and then she collapsed on the floor. Her previous history revealed that she had suffered from anæmia and gastric pain for nearly twelve months and that she had been under treatment for gastric ulcer in the preceding April. Hæmatemesis and melæna were denied. During the few days preceding the present attack she had not felt worse than usual. On the evening immediately preceding it she had gone home and had a "good" supper of cold roast pork, after which she went to bed. She was awakened an hour later by pain in the epigastrium, but she went to sleep again. All the following morning she had gastric pain, which was increased by her breakfast of bread-and-butter and tea. As already stated she was at her work about one o'clock when the attack occurred for which advice was sought.

Dr. Phillips found her in a condition of collapse, with a pale, anxious face, shallow, jerky breathing, a small rapid, weak, irregular pulse, and cold surfaces and extremities. The pain, which was acute, was referred to the epigastrium and left hypochondrium, from which it extended up the left side almost to the axilla. The tongue was foul. The bowels had acted the day before without difficulty. The temperature was 99° F. Physical examination showed a hard resisting abdomen with slight distension, some tenderness in the region to which the pain was referred, and a tympanitic note over the whole abdomen with complete absence of liver dulness. A diagnosis of perforated gastric ulcer was made by Dr. Phillips, and the patient's removal to the hospital was recommended. On subsequent examination at the hospital, the same physical signs being present, it was decided, with the concurrence of Dr. Phillips and Dr. A. V. Trow, to operate at once.

The extremities and trunk of the patient being swathed in warm Gamgee tissue the abdomen was opened by a three-inch incision in the middle line between the xiphi-sternum and the umbilicus. On dividing the peritoneum a gush of turbid fluid and gas occurred and the presence in the fluid of minute oil globules like those present on the surface of soup was taken as evidence of gastric contents in the

abdominal cavity. The stomach and intestines were considerably distended with flatus. The anterior wall of the stomach was first examined, but with negative results. The lesser curvature was next explored and on its posterior aspect in the neighbourhood of the œsophageal opening a round hole was found from which gastric contents were escaping. Its position, as near as could be judged, was about a couple of inches from the insertion of the œsophagus. Its edges were clean cut and its diameter was about seven or eight millimetres. It was situated in the centre of a dense round mass of cicatricial or inflammatory deposit which occupied the entire thickness of the gastric wall. The wall was here of considerable thickness. The area of thickening extended for a distance of about one and a half cubic centimetres around the margin of the ulcer in all directions and over this area the visceral peritoneum was tightly adherent to the subjacent tissues. The contents of the stomach having been squeezed out through the perforation three fine silk sutures were passed as a preliminary measure through the margin of the opening. Such was the density of the surrounding tissues, however, that on several occasions these sutures tore through in the endeavour to approximate the edges of the ulcer. Two ridges of peritoneum were then picked up as near the perforation as the adhesion of the membrane would permit and an inclosing "tuck" between five and six centimetres in length was brought together by a dozen Lembert sutures. The abdominal cavity was then methodically wiped out with warm sponges wrung out of sterilised water and the gastric contents were as far as possible removed. The various recesses in the neighbourhood of the spleen and kidneys were explored, but it was found impossible to wipe out the cul-de-sac between the antero-superior surface of the liver and the diaphragm. The apposing surfaces were here in such close contact, probably owing to upward pressure from the distended intestines, that a sponge could not be passed without the risk of bruising or abrading the surface of the liver. Considerable compunction of conscience resulted, too, from the fact that it was impossible to perform any kind of toilet of the lesser peritoneal sac, notwithstanding the presumption that some of the escaped gastric contents might have lodged there. Access to this region by the route of the lesser curvature was clearly impossible. The cavity might certainly have been reached and cleansed by dividing the two anterior layers of the great omentum, but this was a step which at the time did not commend itself to Dr. Mackay. No flushing was made use of. Gauze drains were placed leading to the antero-superior surface of the liver and to the site of perforation; the peritoneum was drawn together by interrupted sutures of fine gut and the abdominal parietes with stout gut. A space was left in the middle of the wound for the emergence of the gauze drains. Dry dressings were applied and equable pressure was secured by a many-tailed bandage.

With the exception of flatulence, abdominal symptoms were inconspicuous after the operation. The drains, which remained sweet, were removed on the fifth day and the sutures on the tenth day, when the incision was soundly healed. From the tenth to the twenty-first day the temperature was normal and the patient was comfortable. There then appeared an irregular pyrexia, with an evening rise to 100·4°, slight respiratory acceleration, and cough. These signs heralded the appearance of a patch of dulness with friction sounds over the middle of the lower lobe of the left lung. Frequent exploration with the needle gave only a little bloody serum for result. Finally, on the twenty-ninth day, the temperature rose suddenly to 103·6°, and a purulent expectoration, at first fairly copious, set in. This continued for four days, then as it gradually declined in quantity the temperature fell to normal and the cough ceased. The course of events suggests that there was a localised septic infection of the diaphragmatic pleura conveyed through Recklinghausen's lymph channels from the sub-diaphragmatic area of infection in the neighbourhood of the perforation. Pus formation on the pleural side appears to have ensued, with subsequent evacuation of the same through the bronchial tubes. Symptoms suggestive of pus formation on the peritoneal side were not apparent, and the further progress of the patient was rapid and uninterrupted.

Remarks by Dr. MACKAY.—Probably every case of operation for perforated gastric ulcer, successful or otherwise, ought to be reported at the present time for purposes of criticism and of statistics. This consideration is the reason for recording the above case, in which the points worthy of notice appear to be the following:—1. The fortunate conditions which rendered possible a prompt diagnosis and an early operation, the patient being on the table within four hours from the moment of perforation. 2. The technical difficulties which attend an operation in this region of the stomach. While an area on the anterior surface or the greater curvature is easily reached and is easily brought into the operation wound and under the hands of the operator, one on the posterior surface is reached with difficulty, and one in the neighbourhood of the œsophageal opening must be dealt with more or less *in situ*, the attachment of the œsophagus preventing any traction towards the surface. In this case the necessary manipulations were carried on at the bottom of a pit which shelved upwards under the shadow of the xiphi-sternum. 3. The probable occurrence of a direct transmission of septic infection through the lymph channels of the diaphragm, giving rise to a purulent accumulation on the pleural side, without any signs suggestive of pus formation on the peritoneal side.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Adjourned Debate on Arsenical Beer Poisoning.

A MEETING of this society was held on Feb. 12th, Dr. F. W. PAVY, the President, being in the chair.

Dr. E. S. REYNOLDS (Manchester) illustrated by projections of photographs of patients the leading symptoms in order of time: (1) congestion of the conjunctiva; (2) congestion and œdema of the face and legs; (3) erythromelalgia; (4) papular erythema (the face, the arms, and the back); (5) deeper dermatitis simulating late secondary syphilis; (6) herpes zoster; (7) pigmentation of various kinds and degrees—deep general, mulatto-like, punctiform, patchy, &c.; (8) unpigmented scars in generally pigmented skin; (9) pigmentation with furfuraceous desquamation; (10) keratosis; (11) bullæ; (12) transverse furrows of the nails; and (13) purpura (rare). Other photographs illustrated the first onset of paralysis which is evidenced by inability to appose the thumb and little finger, and a case of total paralysis of the diaphragm. Dr. Reynolds also showed (for Professor Delépine) photographs of crystals of As_2O_3 obtained by Reinsch's test from solutions of 1 in 1,000,000 in water and 1 in 100,000 in beer (standardised) and from commercial beer, glucose, and sulphuric acid.

Dr. DIXON MANN (Manchester) pointed, with regard to the clinical features, to some unusual types that occurred in the epidemic: (1) cases without neuritis or skin lesions, but with perspiration, mental apathy, and a tendency to rambling, weak heart, and œdema of the lungs, freedom from pain, fever of from 1° to 3°, and a tendency to sudden death from syncope; and (2) cases marked by tendency to collapse and absence of fever, diarrhœa, vomiting, weak heart, and tendency to syncope, as in subacute poisoning from arsenic. In the former type a diagnosis of enteric fever had been made; in the latter symptoms might be deferred for from four to seven days after the patient had ceased taking arsenical beer. In the matter of chemical observations, arsenic hitherto had been regarded as a non-cumulative poison. He (Dr. Mann) had shown that half an hour after taking five minims of arsenical solution the metal could be detected in the urine. In fatal acute poisoning arsenic was not as a rule detected when the patient had survived for from 14 to 16 days. It appeared that prolonged administration delayed elimination, although, unlike lead or other metals, arsenic did not form stable combinations with tissue proteids. Thus, in the modified conditions of this outbreak arsenic was a cumulative poison. Time was not the only factor. In one case in which a woman who had died 21 days after admission to hospital had been removed from the source of poisoning no arsenic was found post mortem, while in the case of another woman who in the same circumstances survived 52 days arsenic was found. The primary channels of elimination were the kidneys, but the importance of the skin as a secondary channel was very great. He had obtained 0·8 milligramme of As_2O_3 from 10 grammes of keratosis tissue. The nails contained appreciable quantities

of arsenic. As to elimination without symptoms Dr. Mann had found in some surgical patients who drank beer that a considerable amount of arsenic was eliminated by the urine as though no symptoms of arsenical poisoning were present.

Dr. JUDSON S. BURY (Manchester) thought that the nature of cases of slight pigmentation must now be more closely investigated. He believed that he had seen peripheral neuritis in spirit-drinkers. There was in his experience no outbreak similar to the recent one. He had never before seen such severe hyperæsthesia in the limbs. The hyperæsthesia was very persistent, remaining months after the keratosis or the paralysis. In some cases pain and effusion of the joints and tenderness of the bones were observed. He thought the paralysis was more widespread in the arsenical than in most other forms of peripheral neuritis. In the hand the paralysis of extension was marked and it led to a curved shape of the fingers.

Dr. NATHAN RAW (Liverpool) said that the outbreak did not appear to have been so extensive in Liverpool as in Manchester. During the last three years out of 12,623 patients admitted to the Mill-road Infirmary 226 had alcoholic neuritis; of these 147 presented symptoms attributable to arsenic. Of the 226 patients 51 died from cardiac failure and general asthenia. From his statistics he concluded that the contamination of beer commenced in May, 1900. Beer and porter appeared to be the usual vehicles. He had observed very little peripheral neuritis in Scotland. The serious lesions, he thought, were due rather to continued drinking of moderate quantities than to sudden outbursts of deep drinking. Among the symptoms marked pyrexia was present in three cases. He found arsenic in the urine in five cases out of 33 examined, but in no case was he able to find it later than 10 days after admission. Dr. Raw referred to the observation made by Osler to the effect that liquor arsenicalis when given in brandy had more effect than when given in water alone.

Dr. T. N. KELYNACK showed illustrations, photographs, and casts of numerous cases. The casts showed the late effects. He believed that the alcoholic "vehicle" in the form of beer accentuated the toxic effect of arsenic. He had observed cases in infants at the breast, and this pointed to elimination in milk. He thought the presence of As_2O_3 in glucose was associated with an acid reaction. The amount present in different samples of beer varied. In one instance there were 1·4 grains of As_2O_3 in the gallon.

Sir LAUDER BRUNTON referred to John Hunter's experiments on dogs. Hunter found that when dogs were poisoned by placing arsenious acid in a wound they died just as surely as when the poison was swallowed, and after death there was evidence of inflammation of the stomach in both cases, but it was more marked when the poison was absorbed from a wound than when it was taken by the mouth.

Dr. A. P. LUFF had for some years taught that where peripheral neuritis of doubtful origin was present arsenic was to be suspected. The elimination of arsenic in ponderable quantities as described by Dr. Dixon Mann was really a new fact. In one case he (Dr. Luff) had given an adult five minims of arsenical solution three times a day for a short time when suddenly peripheral neuritis set in. It then transpired that the patient was an alcoholic subject. He took notes in 40 cases in Manchester and found that there had been vomiting and colic in only 36 per cent., and these were cases where large quantities had been consumed, so that possibly these symptoms were due to gastric catarrh. He had classified the symptoms in 91 cases, and had found that pain and tingling in the feet and the calves of the legs were a prominent and fairly constant symptoms.

Dr. F. W. TUNNICLIFFE, whilst agreeing that arsenic in the beer accounted for the chief symptoms, thought its action might have been modified by the presence of selenium, which he had found in sulphuric acid, glucose, and beer.

Dr. FREDERICK TAYLOR could not quite agree that peripheral neuritis with marked tenderness of the calves of the legs was practically limited to cases of alcoholic or arsenical poisoning or to beri-beri. He had observed it after typhoid fever and diphtheria and in other conditions.

Dr. SYDNEY RINGER thought that the general action of arsenic was akin to that of the potassium salts, which affected the muscles both of the skeleton and of the heart.

Sir DYCE DUCKWORTH said that in his experience the therapeutic use of even large doses of arsenic was practically free from serious consequences as in the cases before the meeting.

Dr. REYNOLDS, in reply, said that some difficulty of separating cases of peripheral neuritis into etiological groups was caused by the fact that many spirit-drinkers took large quantities of beer.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A CLINICAL meeting of this society was held on Feb. 11th, Mr. J. H. MORGAN, the President, being in the chair.

Dr. C. E. BEEVOR showed two cases of Paralysis of the Serratus Magnus and the Lower Half of the Trapezius occurring in joiners (occupation paralysis). The two cases were identical. One man, aged 27 years, had severe pain in August last in the right supra spinous fossa; two months after he noticed difficulty in raising the arm and two weeks later the deformity of the scapula was observed. The other patient, a man, aged 18 years, had severe pain behind the right shoulder-blade and along the axilla; two weeks after he was unable to raise the arm above the horizontal line and a month later it was observed that he had complete loss of power of the right serratus magnus and of the lower half of the trapezius. In both cases there was inability to advance the arm and carry it upwards beyond the horizontal line, and in this attempt the scapula was drawn upwards and its posterior border projected backwards owing to the serratus magnus being absent. The wasting of the trapezius below the level of a horizontal line from the second dorsal spine to the spine of the scapula was well shown by making the patient carry the arm horizontally backwards against resistance. It was pointed out that "winging" of the scapula might be produced by absence of the serratus or of the lower fibres of the trapezius; in the former the deformity increased as the arm was advanced to the horizontal position, beyond which the patient could not raise it, while in paralysis of the trapezius without the serratus the deformity increased till the arm reached the horizontal line, but above this point the arm could be raised and the deformity disappeared. In the present cases both muscles were affected, but in the first case the serratus had partially recovered and the deformity diminished after the arm passed the horizontal line. The affected muscles gave no reaction with the faradaic current and only a slight slow reaction with the constant current. There was no anæsthesia. Both patients were joiners and the muscles affected were those of the right arm, which would be most used in planing. It seemed probable that the lesion was a neuritis affecting the intra-muscular motor and sensory nerves and that the character of the work was a determining cause and the cases might be looked upon as those of occupation paralysis. In both cases only the fibres of the trapezius below the level of the second dorsal spine were affected and in several other cases Dr. Beevor had found that this was the level of the lower border of the unaffected fibres, where the lower half of the trapezius was paralysed. The reason of this might be due either to the distance of the lowest end of the spinal accessory nerve from its trophic centre in the cervical cord or to the part of the muscle which escaped being the fibres which are supplied by the third and fourth cervical roots as well as by the spinal accessory nerve.—Mr. A. E. BARKER and Mr. EDMUND OWEN discussed the case.

Mr. F. C. WALLIS showed a young woman who had Congenital Synostosis of the Upper Ends of Both Radii and Ulnæ and on one side Ischæmic Paralysis (Volkmann) which supervened on using Esmarch's band during an operation for the relief of the congenital disability.

Mr. WALLIS also presented a second patient who suffered from Pressure Paralysis the result of Tight Splinting for Backward Displacement of the Upper End of the Ulna. The patient showed atrophy of the muscles of the hand supplied by the ulnar nerve.

Mr. H. BARNARD showed two patients—a boy, aged three years, and a girl, aged four years—with Typical Ischæmic Contraction of the Forearm in each case. The deformity was removed by splitting and elongating the flexor tendons through a longitudinal incision above the wrist and the power of supination was restored by elongating the pronator radii teres and detaching the pronator quadratus from its ulnar attachment.—Mr. WALLIS, in reply, said that in cases where no power had returned in the contracted muscles he doubted whether much

improvement would be obtained by tendon elongation.—Mr. OWEN congratulated Mr. Barnard on the good results which he had obtained.—Mr. WALLIS stated the opinion that in ischæmic paralysis operations should not be undertaken until a fair amount of power had returned in the affected muscles.

Mr. MARMADUKE SHEILD showed a boy in whom after failure of the ordinary means he had Removed a Halfpenny which had Lodged Opposite the Upper Edge of the Sternum. The œsophagus, which at the site of operation was covered with indurated inflammatory tissue and glands, was incised longitudinally and the body grasped with long forceps and removed. From the facts that some force had to be used before it was dislodged and that the escape of some pus followed its removal there was no doubt that the body had caused ulceration. The wound was left open and closed slowly in spite of the septic conditions.—The PRESIDENT said that it would be interesting to watch the patient with a view of ascertaining whether the operation was followed by any stenosis of the œsophagus.—Mr. KELLOCK observed that the seat of lodgment of the coin in Mr. Sheild's case was the favourite one and that usually the "coin-catcher" was efficacious.—Mr. WALLIS and Mr. BARKER had also experience of similar cases in which removal was effected by the "coin-catcher."—Mr. SHEILD, in reply, said that he had removed coins, and also a tooth-plate, withh the "coin-catcher," and in this case he had tried the same means but without avail.

Mr. SHEILD also showed a woman after Anterior Gastro-enterostomy for Pyloric Obstruction. The pylorus was found to be thickened and knobby. Murphy's button was used to effect the anastomosis. The patient made a rapid recovery and had put on two stones in weight when she left the hospital.

Mr. SHEILD also showed a man on whom he had operated for a large intermuscular tuberculous abscess of the thigh. An incision 24 inches long was made and the large cavity was allowed to heal by granulation.

Mr. STANLEY BOYD showed a man, aged 47 years, who eight or nine years ago had Severe Pain in the Chest and Abdomen after Food. Vomiting began six years ago in attacks lasting from one to three weeks, with intervals of from four to six weeks, and had continued up to admission. Vomiting usually occurred after lying down at night; about three pints of frothy matter were usually brought up. There was no hæmatemesis but much flatulence. The stomach usually felt distended. Vomiting relieved the distension and pain. He was admitted on December, 1900, under the care of Dr. Abercrombie after a month of daily vomiting. He was transferred to Mr. Boyd's care on Dec. 27th. Even after a fortnight's rest and treatment, which arrested the vomiting, the patient was very thin, pale, and feeble. Abdomen: stomach formed a visible tumour in the left hypochondriac and lumbar, the epigastric, and umbilical regions. No tumour or hard mass could be felt. Splashing was obtained. Capacity was nearly two quarts. There was no sarcinæ in the contents. On Dec. 29th posterior gastro-enterostomy was performed. The opening was from one and a half to two inches long between the stomach and first loop of jejunum, and the edges were secured by three continuous lines of fine silk suture on either side of it. The most external held the sero-muscular coats, the second the cut edges of the same coats, and the innermost united the edges of the cut mucosæ. With regard to the after course the patient vomited once only. Peptonised milk was given by the mouth soon after and was continued in increasing quantity. Nutrient enemata were also given for two days. Minced meat-and-bread were given on Jan. 5th, and the quantity was quickly increased, the appetite being hearty. The wound healed perfectly. The temperature was 100° F. on the second evening, 101° on the 3rd and 4th, and then practically normal. As to the patient's weight, nine days before operation it was 7 st. 12 lb.; 12 days after the operation it was 7 st. 7 lb.; 28 days after operation it was 8 st. 7 lb.; and 40 days after operation it was 9 st. 2 lb.—The PRESIDENT had operated both by the anterior method—i.e., by bringing the small intestine up in front of the colon to the anterior surface of the stomach and using a button—and by the posterior method—i.e., by bringing up the small intestine through an opening made in the transverse meso-colon and making a communication with the posterior aspect of the stomach by means of stitches.—Mr. BARKER said that rapid improvement after gastro-enterostomy could not be taken to mean that the case was not one of cancer. For some years past he had adopted the posterior operation and it had not proved to be much more difficult than the anterior method. With practice the operation could be done with suturing almost as rapidly as with Murphy's button.—Mr. WALLIS said that in some cases the patient did better if placed in the sitting position after operation.—Mr. OWEN had found it advantageous to turn the patient face downwards after meals when the anterior operation had been used.—Mr. SHEILD stated that he allowed patients to lie in the position they found most comfortable.

Dr. W. HUNTER showed a case of Pernicious Anæmia. The patient was a man, aged 37 years, who had enjoyed good health till two years ago when pallor (lemon colour), with pain in the mouth and stomach came on; an inflammatory condition of the tongue was present and was relieved by the removal of three very bad teeth. The gastric pains and anæmia increased, so that he became extremely anæmic, with urobilinuria. The blood corpuscles were 27 per cent. and hæmoglobin 35 per cent. of normal. Suppuration of the gums, which had been present for five years, continued. The treatment consisted of oral and intestinal antisepsis with injections of antistreptococcic serum. In six weeks he steadily improved and gained 7 lb. in weight. Liquor arsenicalis was then added to the treatment and five weeks later he had gained an additional stone in weight and was discharged as cured.—Dr. J. F. H. BROADBENT referred to two cases in which the symptoms of pernicious anæmia had been closely simulated by anæmia secondary to other causes. The first was a case of septic anæmia and was successfully treated by injections of cacodylate of soda, and the second was a case of contracted kidney in which there had been no clinical evidence of the condition.

Dr. STCLAIR THOMSON exhibited two cases to show the desirability in certain cases of Removing the Tonsils by Enucleation. The first patient was a woman, aged 38 years. In 1894 she was in close attendance on her husband who was very ill with tonsillitis and a foul discharge from his throat. Soon after she noticed in her tonsils cheesy collections of offensive taste and fœtid odour. The local conditions were very similar to those presented by her son who was the second case shown at the same time. For this condition she was under continuous treatment for three years. During two years she attended Dr. Thomson's clinic and was actively treated with gargles, paints, lozenges, caustics, the galvano-cautery, and incisions laying open the tonsillar crypts. At the same time attention was given to her digestion and general health. She remained unrelieved. Accordingly, two years ago the imbedded tonsillar stumps were enucleated under chloroform and she had since been quite free of the chronic fœtid follicular tonsillitis which had been such a persistent nuisance. There had been some regeneration of lymphoid tissue between the pillars of the fauces, but there were no crypts in which these cheesy septic concretions could form. The patient found that her voice had not in any way been injured, but rather improved, for singing. The second patient was the son of the former one. He was a boy, aged 10½ years. When four years old his tonsils were noticed to be enlarged and they were removed at the Throat Hospital. He was not again troubled with them until after scarlet fever, at the age of six years, when they were again enlarged and were removed with the guillotine at the Throat Hospital by Dr. StClair Thomson. A few months later cheesy collections were noticed in the crypts of the tonsils, and these had since continued almost without intermission. He was under treatment from September to December last. The chief complaint was of his foul breath, which was said to be most marked in the morning, but was perceptible when he was asleep with his mouth closed. The tonsil stumps were seen to be deeply imbedded between the faucial pillars. They were riddled with crypts, some of which were half an inch deep. From these crypts dirty white, fœtid, cheesy matters were easily extruded. There were no adenoids. It was seen that it was impossible to thread these tonsillar stumps into the ring of the guillotine. In the previous case all attempts to obliterate the crypts failed. The choice of treatment, therefore, seemed to lie between punching out the remains of the tonsil by *morcellement* or enucleation, as in the former case. The mother of the boy was so gratified with the result in her own case that she was anxious for him to have the same treatment. The operation was performed under a general anæsthetic, chiefly by a pair of curved scissors and the fingers.

Dr. J. L. BUNCH showed a case of Localised Abdominal Swelling. The patient was a child, aged three years, who

was strong and healthy up to five months ago, when she had bronchitis and was in consequence kept in bed for a fortnight. When she got about again she seemed rather weak and ailing at first. Soon afterwards her mother noticed a swelling of the right side of the abdomen, and during the last three months this had gradually increased in size. The swelling was said never to become appreciably smaller, but the mother thought that it was sometimes a little "softer" first thing in the morning or after the child had been lying down for a considerable time. The child had never been out of England. There was now an elastic swelling of about the size of a cricket ball in the right hypochondriac and upper part of the right lumbar regions, which formed a definite prominence when the child stood up. The percussion note over the swelling varied. No thrill could be made out. The child was apparently in good health. The urine was normal. —The PRESIDENT thought that the swelling was due to a local weakness of muscle rather than to a definite tumour.—Dr. EDMUND CAUTLEY had under his care a similar case and regarded it as being due to muscular defect.

CLINICAL SOCIETY OF LONDON.

Address of Condolence to His Majesty King Edward VII.—Leucocythæmia.—Instantaneous Radiography.

A MEETING of this society was held on Feb. 8th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

The proceedings opened with an address of condolence to His Majesty King Edward VII. in respect of the death of Her Majesty the late Queen and of congratulation on his accession to the throne.

Dr. D. N. NABARRO read notes of a case of Pronounced Spleno-myelogenic Leucocythæmia subsequent to an attack of Malarial Fever. The patient, a man, aged 23 years, consulted Dr. Thin on account of enlarged spleen on March 28th, 1900, at the recommendation of Dr. C. H. Perram of Bedford. He went to Vancouver in 1899 and considered himself to be then in good health. During April and May of that year, which were wet and cold months, he felt very tired. In July he was attacked by "chills." The rigors came on about midday, lasting an hour, then for an hour he felt hot in the head, with a final stage of perspiration. He was confined to bed for four days. Not regaining his strength he returned to England in October of the same year. He had noticed that he was getting corpulent towards the end of August and thought he was getting fat. The abdominal enlargement, however, was found to be due to enlarged spleen when the patient was first examined by Dr. Perram on Dec. 13th. Dr. Thin wrote to Mr. J. A. Pybus for further information regarding the origin of the illness, and was informed by him that the patient first consulted him on July 5th, 1899, and he was asked to see him again on July 11th. He then complained of feeling ill, had a quick pulse and a furred tongue, with a temperature of 104° F. Under treatment, antipyretics and quinine, the temperature sank to 99·5°, and on July 26th he was considered cured. During August and September he was subject to sensations of chilliness but had no rise of temperature. When he left for home on Sept. 26th he seemed to Mr. Pybus to be suffering from some "pernicious toxæmia." He told Mr. Pybus that while at Manitoba, about April 2nd, he stayed two days in a low, swampy place, and from July 20th to 27th he camped beside a small creek where there were swarms of mosquitoes. Mr. Pybus informed Dr. Thin that he saw three other cases of fever in a house two miles distant from that in which the patient under notice lived. These cases were similar in nature and were characterised by high temperature, 104° in one case and 106° in a second. The attack in these cases lasted 10, 16, and 20 days respectively, and all the patients made good recoveries. Mr. Pybus stated that "these were the only cases of fever in the district during the 10 years he had been in practice there and were believed to be of a typho-malarial character." On Dec. 13th the spleen was found definitely to be the cause of the abdominal enlargement. On March 28th, 1900, Dr. Thin found the patient to be very pale and anæmic and with a "very large spleen, which descended to the groin on the left side and crossed nearly to the ilium on the right side." No malarial parasites or pigmented leucocytes were discovered on careful examination, but the white corpuscles were greatly increased in number. On May 25th, by the kindness of Dr. Thin, the patient was seen by Dr. Nabarro and a complete blood examination was made. The spleen was then as large as it had been found to be in March and was slightly tender about the notch. There was no enlargement of the liver or of any lymphatic glands. In September another differential count of the leucocytes was made and on Nov. 16th the patient was again seen at Dr. Thin's house and a complete blood examination was again made. (The conditions that were found at the different examinations are shown in the subjoined table.)

—	1900.			
	March.	May 23rd.	Sept. 8th.	Nov. 16th.
Red corpuscles	—	3,250,000	—	2,966,700
White ,, ...	—	750,000	—	666,700
Ratio of white to red	—	1 : 4½	—	1 : 4½
Hæmoglobin per cent.	—	36-40	—	40-42
Colour index	—	6	—	0·68
Lymphocytes (small)	9 per cent.	6	1·5	2·3
,, (large) ..	10·6	4	2·0	0·5
Polymorphonuclear-leucocytes	41	47	38	38·4
Eosinophiles	10	8	8·8	10·8
Myelocytes	28	32·5	46·5	42
Basophile	1	2·5	0·8	Very few.
Nucleated red (per 1000 white counted)	13	51	10	20

Many transitional forms between large lymphocytes, polymorphonuclear leucocytes, and myelocytes were seen. The films were fixed by immersion in alcohol and ether and stained by eosin and hæmatoxylin and by the Ehrlich-Biondi triple stain. In November the patient was feeling so much better that he was desirous of taking up some occupation. The spleen was as large as ever but causing no inconvenience beyond a feeling of weight when the patient was tired. Treatment had brought about but little benefit as regards the condition of the blood or of the spleen. The patient had had at various times arsenic, iron, quinine, and preparations of hæmoglobin and bone marrow. There were a few interesting points in the case—(1) the antecedent history of malaria, almost certainly indicated by the "chills" described; (2) the great size of the spleen before attention was drawn to it and the slight inconvenience caused by it; (3) the condition of the blood showed a great diminution in the percentage of lymphocytes (from 20 to 23 per cent.) and a corresponding increase in the number of myelocytes (from 28 to 42 per cent.) between March and November, 1900; and (4) in spite of the marked anæmia and the large number of white cells in the blood the patient was apparently in good general health and was anxious and able to follow an occupation.

Mr. E. W. SHENTON displayed a large number of radiograms taken with very short exposures, examples of so-called Instantaneous Radiography. He explained that the word "instantaneous" merely conveyed the idea that the exposure had been reduced to reasonable limits—i.e., from a fraction of a second to a maximum of 30 seconds. This he had been enabled to accomplish by the aid of x ray tubes of larger size, whereby not only was the exposure materially reduced, but the deeper parts of the body could be readily seen on a screen. He described the advantages of these tubes in the detection of renal calculus, in the treatment of fracture, and in the rapid localisation and extraction of foreign bodies. Mr. Shenton then demonstrated a very simple and effective method of ascertaining the exact position of a foreign object inside the body. When the shadows of the body and foreign object were thrown upon the screen, on the tube being moved from side to side it was seen that the rate of movement of the two was different owing to their different distance from the tube. If a probe were placed behind the screen at a distance at which its movements approximated those of the foreign body, that would be the distance of the latter, and by repeating this proceeding in different positions the whereabouts of the foreign body could be ascertained to a nicety. (This was demonstrated by the aid of a lime-light projection in a perfectly satisfactory manner.)—The PRESIDENT said that although Mr. Shenton had not

touched upon cases of mediastinal growth or other internal disease, the subject was one which could not fail to interest physicians as well as surgeons.—Dr. G. B. BATTEN said that he had used the rays very much in his practice and had never seen as complete an installation as that of Mr. Shenton or any results approaching his in clearness and rapidity of exposure. He himself had used identical apparatus but had not obtained identical results. With the tubes used by Mr. Shenton things could be seen on the screen which would escape notice under other circumstances. They were not, he said, what would be called high vacuum tubes, but gave an abundance of x-rays. He thought that Mr. Shenton had not done himself justice in that he had not described the details of his method, it being the details which enabled him to obtain such admirable results. With regard to the localization of foreign bodies he related a case in which a young man had lodged a bullet in his thigh. After some search it was made out near the knee, and by marking the spots on the knee at which it was seen in different positions they obtained an indication of locality which enabled the surgeon to remove it almost at once.—Mr. STANLEY BOYD asked what was the peculiarity of the method which enabled it to yield such excellent results?—Dr. HUGH WALSHAM raised the question whether such short exposures were desirable in cases of pulmonary tuberculosis. He had failed to obtain a shadow in a case of moderate severity which came out with a longer exposure, though he admitted the manipulator might go too far in this direction. He thought, too, that photographs sometimes revealed appearances which would not be seen on the screen.—Mr. CAMPBELL WILLIAMS asked whether dermatitis had ever resulted from these exposures, and he mentioned two cases in which more or less severe inflammation of the dermis had been caused by prolonged exposure.—Dr. EASTES asked whether the retinæ were affected by constant exposure to the rays?—Mr. SHENTON, in reply, said that there was a good deal to be done on the medical side. This was a branch at which they were all working at present but much remained to be learned. He disclaimed any technical knowledge in respect of the manufacture of these tubes and his results were merely empirical. He had found that the large tubes gave better results. Most tubes were made with three electrodes, but he found that two sufficed to obtain these results. He pointed out that for each case there was a correct exposure and any error either way marred the results. He thought photographs should be used to confirm what they had seen on the screen. Some things, however, were better seen in photographs owing to the fact that screens were made of coarse material so that fine details might be overlooked. He had seen nothing of dermatitis except what he got on his own hands. He had no knowledge of any effect on the retina.

OBSTETRICAL SOCIETY OF LONDON.

Exhibition of Specimens.—List of Officers and Council.—Annual Address.

A MEETING of this society was held at 20, Hanover-square, W., on Feb. 6th, Mr. ALBAN DORAN, the President, being in the chair.

The following vote of condolence to the Royal Family was passed by the Fellows:—

That the President and Fellows of the Obstetrical Society of London humbly beg to express their sincere sorrow at the death of their beloved Queen and they further beg to tender to the Royal Family their deepest sympathy and to His Majesty the King the assurance of their loyalty and devotion to the throne.

Mr. HASTINGS GILFORD showed a specimen of Rupture of the Sac of an Early Primary Ovarian Gestation in a woman, aged 38 years. Rupture with severe internal hæmorrhage occurred 14 days after the previous menstrual period. At the operation the Fallopian tubes were found to be intact and there was a rent in the left ovary, with thin irregular edges, with firm clot attached. About two pints of blood had escaped from the rent. The firm clot attached to the rent was believed to be a "blood-mole." Mr. Gilford argued against the hæmorrhage having come from either a tubal abortion or a ruptured matured Graafian follicle.—Dr. T. W. EDEN said that, speaking from a casual examination of the specimen, he doubted if it were really an example of ovarian pregnancy. On naked-eye examination the so-called mole did not show much evidence of being a product of gestation at all, but perhaps the presence of chorionic villi had been demonstrated by the microscope. The specimen differed greatly from the examples of ovarian gestation recently shown to the society by Dr. E. O. Croft and from the classical case of van Tussenbroek in the circumstance that the ovary was little altered in its outline and shape, the cavity in which "the mole" was contained being quite superficial. One of the essential points in the diagnosis of ovarian pregnancy was the demonstration of ovarian tissue in the wall of the gestation sac, and this did not seem to be practicable in the case now before the society, for the wall of the sac appeared to be an adventitious product.—Dr. C. J. CULLINGWORTH, speaking in reference to the condition of the Fallopian tube, said that too much importance should not be attached to this. It had been shown that the tube might very quickly resume its normal size and appearance after tubal rupture, and it was obvious that it would even more readily do so after tubal abortion. He referred to cases reported by himself, the President, and Mr. Bland-Sutton, to prove that the empty condition and innocent appearance of the tube were not incompatible with the gestation having been primarily tubal.—Dr. HEYWOOD SMITH asked if ovarian pregnancy had been observed in the lower animals.—Mr. GILFORD replied and consented to his specimen being referred to a sub-committee for report.

A report of the sub-committee on Dr. Croft's specimen of Primary Ovarian Pregnancy was read, agreeing with his view of the case.

Dr. W. H. TATE showed a Fibroid Tumour with marked cystic degeneration, removed from a patient, aged 63 years, in whom both ovaries had been removed 11 years previously. The woman suffered from severe menorrhagia due to a fibroid which reached up to the umbilicus. After the operation in 1889, when a tubo-ovarian cyst on the right side and the appendages on the left were removed by Dr. Cullingworth, she remained well till 1896, when hypogastric pain recurred and the fibroid was found to be increasing in size. Last month the fibroid had reached 11½ inches from the pubes and was evidently cystic. Dr. Tate removed the fibroid by abdominal hysterectomy, and the patient recovered. The tumour was found to be a fibroid converted into a loculated cavity containing 42 ounces of coagulable straw-coloured fluid. The case proved that degenerative changes in uterine fibroids might occur after complete removal of the appendages as well as after a natural menopause.—Dr. CULLINGWORTH urged the importance of recording all cases bearing on the liability of fibroids to increase in size and to undergo serious degenerative changes after the menopause.—After remarks by Dr. A. H. N. LEWERS and Dr. HERBERT SPENCER, Dr. C. HUBERT ROBERTS asked if the spaces in the specimen had an endothelial lining. He had not found such a lining in any cystic fibroids of the uterine body, but the spaces contained an easily coagulable serous fluid. He thought that such spaces were due to retrograde degeneration and were not of lymphatic origin. The spaces found in cystic fibroids of the cervix were not uncommonly lined by epithelium.—Dr. TATE replied.

Mr. HUGHES R. DAVIES showed Pessaries for use in cases of prolapsed and retroverted uteri.

The report of the honorary treasurer, Dr. J. Watt Black, was then adopted upon the motion of Dr. C. H. F. ROUTH, seconded by Dr. PETER HORROCKS.

The report of the honorary librarian, Dr. M. Handfield-Jones, was adopted upon the motion of Dr. A. H. N. LEWERS, seconded by Dr. DRUMMOND ROBINSON.

The report of the chairman of the Board of Midwives, Dr. Percy Boulton, was adopted on the motion of Dr. G. E. HERMAN and Dr. C. J. CULLINGWORTH.

The following List of Officers and Council for the ensuing session was then announced, Dr. EDWARD MALINS proposing, and Dr. W. G. GOW seconding, a vote of thanks to the retiring Vice-President and members of council:—President: Dr. Peter Horrocks. Vice-Presidents: Dr. John W. Byers (Belfast), Dr. William Radford Dakin, Dr. John Phillips, and Dr. Edward Malins (Birmingham). Treasurer: Dr. James Watt Black. Chairman of the Board for the Examination of Midwives: Dr. W. R. Dakin. Honorary Secretaries: Dr. Herbert R. Spencer and Dr. Amand Routh. Honorary Librarian: Dr. Montagu Handfield-Jones. Other Members of Council: Mr. Charles Edmund Adams, Dr. A. H. Freeland Barbour (Edinburgh), Dr. George Francis Blacker, Dr. Robert Boxall, Dr. Henry Briggs (Liverpool), Dr. Francis Henry Champneys, Dr. Thomas Vincent

Dickinson, Dr. Charles Owen Fowler, Dr. William John Gow, Dr. Walter Spencer Anderson Griffith, Dr. George Ernest Herman, Dr. Arthur H. N. Lewers, Dr. Thomas Robert Lombe (Torquay), Dr. William Loudon Reid (Glasgow), Dr. William Japp Sinclair (Manchester), Dr. Arthur Francis Stabb, Mr. John William Taylor (Birmingham), and Dr. Charles Percival White.

The PRESIDENT delivered the Annual Address. He remarked that the society, founded in 1859, was within eight years of its jubilee and never stood higher than it did at present for the high quality of the contributions read at its meetings and for the interest taken in its discussions. After reviewing the work of the past year, the President announced that the council had appointed a sub-committee to draw up an "index" founded upon the various systems of teratological nomenclature at present in use and upon the specimens in the London museums, for it was felt that an index of this kind would be of great value to Fellows showing specimens before the society and might well become a standard system of nomenclature, at least for English writers. The President read obituary notices of the five Fellows of the society who had died in 1900—namely, one honorary (and original) Fellow, Sir W. O. Priestley, and four ordinary Fellows, Dr. W. Chapman Grigg, Mr. Claude Clarke Claremont, Dr. Horace Howell, and Dr. John Baptiste Potter. Finally, the President, in resigning his office, thanked the society for the friendly support which they had granted him and congratulated them on their choice of a successor.—A vote of thanks to the retiring President for his address and for his able chairmanship was moved by Dr. F. H. CHAMPNEYS, and seconded by Dr. J. WATT BLACK, and was carried by acclamation.—The PRESIDENT replied.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Hospital Isolation in Scarlet Fever.

A MEETING of this society was held on Feb. 8th, Dr. J. C. MCVAIL, the President, being in the chair.

Dr. C. K. MILLARD, medical officer of health of Burton-on-Trent, read a paper on the Influence of Hospital Isolation in Scarlet Fever. The influence of hospital isolation on the spread of epidemic and infectious diseases could not, he maintained, be considered as a whole; each disease must be studied separately, for it did not follow from the success attending such measures with small-pox or cholera that they were equally applicable to scarlet fever or measles. After quoting the opinions expressed by the late Sir George Buchanan and Dr. A. Newsholme that such statistics as those with which they had at present to be content were not conclusive in favour of the influence of these hospitals in reducing the prevalence or the fatality of scarlet fever, and that they must wait for further experience with the better recognition of factors as yet ill understood or undiscovered, he pointed to the admission of Dr. Wilson of Ayr that the decrease in the mortality from scarlet fever of late years, though coinciding in point of time with the adoption of notification, could not be wholly due to these measures, since it had been likewise observed in towns where no provision had been made for isolation, in rural districts without sanitation, and in the United States of America, where isolation was unknown. He quoted also the opinion advanced by Mr. E. D. Marriott of Nottingham that isolation or, as he described them, aggregation hospitals actually contributed to the diffusion and increased virulence of the infection. He then proceeded to give an account of his own inquiries. He had obtained from 113 towns—viz., 31 great towns, 81 smaller towns, and the County of London—returns of the population, cases notified, cases under five years of age, cases isolated, and deaths registered, as well as the personal opinions of the medical officers of health as to the value of isolation in reducing either the mortality, the prevalence, or the fatality. The majority of these were favourable, but apparently mere personal impressions not based on strict inquiry. Anticipating objections, he maintained that all the requisite conditions of a scientific experiment were present; the disturbing influence of epidemics and local circumstances could be eliminated by grouping towns and taking series of years; and they had control experiments in towns that had never attempted isolation at all. The contrast between the fearful mortality from scarlet fever prior to the years 1875–80 and the insignificant death-rate and fatality irrespective of the prevalence in subsequent years had been ascribed to influence of isolation hospitals, the adoption of which coincided with "the great slump," but, as his diagrams showed, it occurred in a large proportion of these towns before the erection of the hospitals had been begun, and was equally pronounced where there had never been any such hospitals. He had based all his calculations on the total populations or in single towns on the actual number of cases, since he could not obtain the preferable basis of the number of persons under 10 or 15 years of age. In Huddersfield with the lowest general death-rate and the lowest infant mortality of any of the 33 great towns, with notification and isolation carried out for over 20 years, and the cases treated in hospital rising from 67·7 per cent. in 1880–89 to 90·4 per cent. in 1890–99; the average annual number of cases had risen from 256 in the former to 427 in the latter, the mean attack rate having been 4·31 per 1000 and the fatality 4·49 per cent., as against 4·45 and 3·29 in a group of four large towns without any isolation. The lower fatality of hospital cases was often urged in favour of those institutions, but in Huddersfield the difference was so great—viz., 3·18 per cent. for hospital cases and 16·91 for home ones in 1890–99, or in the last two years 1·8 and 1·5 against 18·2 and 28·5—that it could not be wholly due to the treatment. He criticised in like manner the statistics of other large towns in order with like results, the apparent reduction at Derby being explicable by the actually decreasing birth-rate in an increasing population. At Oldham, in consequence of small-pox in 1892, the hospital was closed to scarlet fever for two years, yet during those years and that following there was less fever in the town than ever. Swansea, on the other hand, a town the sanitary conditions of which were none of the best, and where prior to 1880 the mortality in successive epidemics had been frightful, had, without an isolation hospital, shared in the general improvement, the attack rate for 1891–99 having been 5·74 per 1000, and the fatality in 1895–99 only 2·19 per cent., and in 1896 three deaths in 549 cases. Equally negative results were shown by the statistics of greater and lesser towns when grouped as those in which over 40 per cent., under 40 per cent., and none or practically none of the cases were isolated in hospitals, and whether the periods taken were 18 or 10 years, and again when the Lancashire towns, excluding Manchester, Salford, and Liverpool, were compared. They were, he considered, driven to the conclusion that the aggregation of cases in hospitals, under the name of isolation, developed a type of fever of greater persistence and infectivity, of which the "return cases" were the product, and which would in course of time be felt in a generally increased virulence of scarlet fever throughout the land, nor had he any trust in convalescent hospitals as a means of avoiding the danger. A full and authoritative inquiry was needed.

Dr. WILSON (Ayr) considered that no decisive evidence had been as yet adduced of the beneficial influence of hospital isolation, and Sir Richard Thorne, in the Majority Report of the Vaccination Commission, admitted this when he ascribed the reduced mortality from scarlet fever to a recent change of type, and suggested that the advantages of hospital treatment might have been over-estimated, even in the case of such diseases as small-pox and cholera. The diversity of opinion among experts indicated the need for inquiry with a view, not to the abandonment, but to reforms in their administration—a matter of great difficulty. Return cases occurred as often in private as in hospital practice, and in the latter the symptoms often did not develop until after the patient had left the hospital.

Mr. SHIRLEY MURPHY maintained that the real question, what the mortality would have been in the absence of the hospital, could not be solved by such statistical methods. Inquiry was needed, but the collection and collation of mere opinions by a Royal Commission would be useless. It must be the individual observation year after year of the cyclical and seasonal prevalence of the disease as well as of casual outbreaks, for there were many causes of prevalence and means of infection known and unknown, and the provision of hospitals could not be expected to alter the laws of natural phenomena. The words of Sir George Buchanan as to their ignorance of these, even the obvious connexion between season and disease, were and would long be as true as when uttered. But personal contact was a cause of the spread of the disease, and if isolation could not be secured at home it must be provided in hospital.

Dr. P. BOOBBYER (Nottingham) would be the last to defend the present management of fever hospitals, which were everywhere overcrowded—grossly so at Nottingham; yet in 1899 they had only 16 deaths in 1200 cases, and no increase in the mortality outside, which was also the lowest on record. There was absolutely no evidence forthcoming of the evolution of a new type of infection in hospitals, and the equivalents of return cases were at least as frequent in private practice, though often unnoticed.

Dr. A. NEWSHOLME (Brighton) considered Dr. Millard's statistics for each year most valuable, but averages for groups of towns were of no practical use, for not only might the circumstances, known and unknown, of the several towns differ, but the recurrent maxima of prevalence, the meaning of which was a great desideratum, falling in different years were thereby deprived of all significance. Personal infection was, at any rate, one cause, and with the isolation they had one cause less. If the mortality in America had sunk without hospital isolation it must be owing to some unrecognised factor common to both continents and was no argument against the adoption of another means in addition. Home cases frequently spread the infection after the most complete disinfection possible.

Mr. B. BROWNING (Weymouth) remarked that home isolation was perfunctory, whereas isolation in hospital was real, though too often combined with overcrowding. In his town they had had 127 cases in a single outbreak, nearly all sent to the hospital, but no return cases whatever. The cause was found to be the milk-supply from three infected dairies outside the district.

Mr. T. ROBINSON (Leicester) maintained that Dr. Millard's method of grouping effaced sanitary conditions, which were evidently powerful factors. Why but for such conditions had Bolton and Oldham with equal isolation such different mortalities, and Wigan and Warrington like mortalities with such different proportions of isolated cases?

After remarks by Dr. W. A. BOND (Holborn), Dr. E. GWYNN (Hampstead), Dr. C. SANDERS (West Ham), and some others Dr. MILLARD replied, reiterated his arguments, and defended his grouping of towns as tending by obliterating other differences to emphasise the one in question. He, however, would not ask for the suppression of isolation hospitals, but merely for a searching inquiry into, and reform of, their administration and he was ready to let go his speculations as to an intensification of the infection.

LIVERPOOL MEDICAL INSTITUTION.

Resolution expressive of Condolence with His Majesty the King on the Death of Her Majesty the late Queen and of Attachment to the Throne.

THE eighth ordinary meeting of this society was held on Jan. 31st, Mr. EDGAR A. BROWNE, the President, being in the chair. At this meeting, which was very largely attended, the ordinary business was entirely suspended and the members met together to express as individuals and as a body their sorrow at the loss of their beloved Queen and their sympathy with and attachment to the throne. The PRESIDENT, Dr. NEVINS, Sir WILLIAM BANKS, Dr. W. CARTER, Dr. ARTHUR EVANS, Professor A. M. PATERSON, Dr. E. W. HOPE, and Dr. MACFIE CAMPBELL made speeches referring to the example, beauty, and dignity of our dead Queen's life, and commenting upon the unparalleled advances made in all branches of science, and more especially with reference to those made in medicine, surgery, and public health, during the Victorian era. The following expression of sympathy, moved from the chair and adopted in silence, the members all standing, was directed to be forwarded to the King through the honorary secretary.

TO THE KING'S MOST EXCELLENT MAJESTY.

The members of the Liverpool Medical Institution (founded in 1837, the year of the Royal Accession) desire to record their deep sorrow at the death of their beloved Queen, who for more than 60 years has not only ruled this great Empire with justice and moderation, but has invariably shown wise and humane sympathy with the efforts of all classes of intellectual workers in the kingdom.

They desire to offer to Your Majesty their profound sympathy in your bereavement and to assure you of their attachment to your person and throne.

Exhibition of a Case.—The After-history of Cases of Uterine Cancer treated by Vaginal Hysterectomy.

The ninth ordinary meeting was held on Feb. 7th, Dr. MACFIE CAMPBELL being in the chair.

Mr. G. P. NEWBOLT showed a girl, aged 11 years, upon whom he had operated for the relief of deformity caused by the fact that the left leg was two and a quarter inches longer than the right. By removal of one and three-quarter inches of bone from the elongated left femur the two limbs were made nearly equal in length and the deformity was corrected. The case was illustrated by lantern slides.—Dr. W. ALEXANDER and Mr. RUSHTON PARKER discussed the case and Mr. NEWBOLT replied.

Dr. H. BRIGGS read a paper on the After-history of Cases of Uterine Cancer treated by him by Vaginal Hysterectomy. Between March 24th, 1899, and Nov. 7th, 1900, he had operated on 84 patients. Concerning the after-results, it was shown that where recurrence and death occurred in the series death was not later than the end of the fourth year; consequently a period of over four years was apparently a fair time-test as to radical relief. A report within a year on a series of cases was useless. Dr. Briggs for convenience had subdivided his cases into three groups. Group 1, adapted to the time-test of upwards of four years, included the patients operated upon before the end of 1896, 33 in number, less one who died from operation and two who had escaped observation. Of the remaining 30 six (or 20 per cent.) were alive and radically relieved (from four and a half to 10½ years after operation). Group 2, 38 operations during three years (1897, 1898, and 1899), two deaths from operation, leaving 36 patients, of whom 16 were living and known to be free from recurrence (from one and a quarter to three and five-sixths years' interval) and two living with known recurrence. Group 3, the cases of 1900, referred to 13 patients whose after-histories were too recent to be of any service; one patient died—the result of operation. Most attention was devoted to Group 1. The cases were described and the occasion became the equivalent of an audit, as evidence of the character of the uterine growth was produced. The evidence was (1) a microscopical section for the histological structure; (2) a recent water-colour drawing of the growth *in situ*; and (3) the preserved specimen of the uterus. This threefold evidence was complete in four instances and in the other two the absence of the preserved specimen was compensated for by the excellence of the artists' reproduction. In none was the evidence of the microscopical structure wanting. The proof of radical relief in six cases was apparently established. Referring to Group 2 Dr. Briggs explained that his object was chiefly to show the high ratio of early recurrence. Out of the 71 patients operated upon prior to the end of 1899 three died from operation, 19 had recurrence and died within the first year, and 15 had recurrence and died within the second year. No other causes of death were certified. This ratio of early recurrence was to be deplored; it was often noticed in published records, but putting Group 1 and Group 2 together there were 22 patients out of 66 who had been traced alive and apparently free from recurrence from one and a quarter years to 10 years after operation. In taking the causes of early recurrence into consideration Dr. Briggs said that they were the same as the causes of incomplete operation—delay in diagnosis, the difficulty in ascertaining the limits of the growth, faulty methods of operation, and restricted limits of operation. Each of these causes was alluded to and reference was made to the recent revival of the abdominal route for operation. A summary was given of the morbid anatomy of the 84 growths examined after operation; three were sarcomata, 15 of the 66 carcinomata were malignant adenomata (after Ziegler), and these last-named growths were especially apt to be confused with chronic glandular hyperplasia and simple adenoma by microscopical methods where the clinical signs and symptoms left a doubt. In the body of the uterus malignant adenoma was diagnosed often under difficulties of access to the growth and of structural differentiation under the microscope; the naked-eye features of curetting should be noted. Probably the fashion of prescribing medicinal styptics was in the absence of a diagnosis to be deprecated: it misled patients in many instances into believing that the medical attendant really thought that medicine might cure them of their ailments. The four deaths in the series of 84 cases were: one from shock (30 hours), two from peritonitis (on the sixth and eighth days), and one from embolic septic pneumonia on the thirty-fifth day. They all occurred amongst the more advanced cases of cancer.—Dr. E. T. DAVIES remarked that out of Dr. Briggs's 84 cases there was a primary mortality of 5 per cent. which should not be ignored; that out of 14 cases of cancer of the uterine body which Cullen said was three times less malignant than cancer of the cervix there was a mortality of 50 per cent.

from recurrence, in periods of from six months to three years; and that the seven cases "still living" had only been operated upon at periods from 18 months to five years, which periods Dr. Davies considered too short to speak favourably on these patients. Referring to the tables which included 49 cases of carcinoma of the cervix (the most malignant site of all), 33 patients, equivalent to 67·3 per cent., died in from one to three years, leaving only 16 patients living for periods of from six months to six years, and these periods he considered too short to prognosticate from except in an unfavourable direction. Dr. Davies considered that the surgery of cancer was exactly in the same position as it was when he left it five years ago—a hopeless chaos.—Dr. T. B. GRIMSDALE said that the success measured by radical cure was not great, but there was a distinct gain in the average length of life after vaginal hysterectomy; moreover, the life of the patient was made more bearable—there was the removal of the bleeding and offensive discharge of cervical cancer and of the pain in body cancer. The small mortality of the operation encouraged operators to perform vaginal hysterectomy as a palliative measure, and this, of course, would make the results as far as cure was concerned appear even worse than they should.—Dr. J. E. GEMMELL considered that Dr. Briggs's paper and analysis of cases with the complete record as to pathological condition and after-history comprised not only a valuable record, but were a distinct encouragement to the treatment by vaginal hysterectomy within such limits of selection as fairly free mobility downwards of the uterus, or even (as a palliative measure and freeing the patient from much after-misery and distress) when there were some slight infiltration and thickening of the broad ligaments. The great difficulty was that patients did not seek advice early enough and the bulk of the cases when first seen were inoperable. Dr. Gemmell's cases of vaginal hysterectomy only dated back three years and therefore were without the time-test of four years, but up to the present time he had had no deaths from the operation and several of the earlier cases had, in his opinion, amply justified this method of treatment.—Dr. ALEXANDER also spoke and Dr. BRIGGS replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Hæmatemesis.

THE fifth ordinary meeting of this society was held on Feb. 6th, Dr. A. G. MILLER, the President, being in the chair.

The evening was devoted to a discussion on Hæmatemesis, which was opened by a paper read by Mr. MAYO ROBSON of Leeds. This paper was published in full in THE LANCET of Feb. 9th, p. 375.

Dr. J. O. AFFLECK, who followed, thought that the results obtained by Mr. Robson should be ascribed not only to his surgical dexterity and aptitude but quite as much to the thought and care which he had given to the cases and to his large clinical experience. There were two points which seemed to him of importance as regards gastric ulcer. 1. Diagnosis.—There was no absolute diagnostic sign though one could get very near to an absolute diagnosis. The pain referable to an ulcer of the stomach was not always reliable either as regards the situation or the chronicity of the ulcer. Sometimes the pain of a gastric ulcer was misleading—e.g., the pain which was often complained of as starting immediately after the ingestion of food and as pointing to an ulcer at the cardiac end of the stomach. This pain might really not be due to the direct irritation by food but might very likely be caused by the movements set up in the stomach by the presence of food in it, or again it might be due to the outpouring of acid secretion. The pain connected with an ulcer of the stomach might also be reflected and might be referred to one or other iliac region. A careful examination of the gastric contents or vomit by chemical means was often of the greatest value to the physician. In chronic ulceration of the stomach they found alterations in the size and shape of the organ—e.g., dilatation, contraction, or hour-glass constriction. The aid to diagnosis caused by the evolution of carbonic acid gas in the stomach had always seemed to Dr. Affleck a questionable proceeding. Some gastric ulcers were very easily ruptured and he knew of one case where this had happened after the patient had taken a cup of coffee. Though he could not recollect a case of rupture as having been recorded due to distension by gas, still it might occur. He had frequently demonstrated the size of the stomach by simply manipulating the skin over the viscus, thus causing the muscular coats of the stomach to contract and so map itself out. It was not every acute or chronic ulcer which bled, but a recurrent hæmorrhage was very characteristic of chronic gastric ulcer. Acute gastric ulcers were characterised by sudden and violent hæmorrhages taking place within a few hours of one another. 2. Treatment.—As regards the treatment of an acute ulcer one must trust to medical aid in the first instance; but the question always was, How much good did medical treatment really avail? Most of the so-called styptics might be used without the slightest benefit. Dr. Affleck had found most benefit to be obtained from the employment of morphia and absolute rest—both mental and physical rest being thus obtained. The generality of acute ulcers got well of themselves, and so one could in most instances allay the mental distress caused by the bleedings by telling the patient or friends that in all likelihood the hæmorrhage would soon cease. Mr. Mayo Robson advocated operative measures after a second hæmorrhage, but Dr. Affleck said that he would like a little more evidence regarding this. He recollected the case of a girl who died from hæmorrhage and the post-mortem examination showed the presence of 20 ulcers in the stomach and several in the duodenum. Many acute bleeding ulcers underwent complete spontaneous cure. The tendency of chronic ulcer was also to heal. They often found that cicatrisation was almost complete but not entirely. These were the cases which seemed to him to call for operation, as nature's efforts to heal these chronic ulcers often caused much suffering to the patient. Rest and treatment in these chronic cases often led to cures which were more apparent than real, as relapses very soon followed as a rule, the ulcer never having been perfectly healed. Surgical intervention then seemed to him to be chiefly indicated in such chronic cases, but in acute ulcers Dr. Affleck had his doubts as to its advisability. Many patients would much rather submit to a merely mitigating treatment than suffer the much more severe method of treatment by operation. Unless the surgeon was one well versed in the symptoms and diagnosis of gastric ulcer he should not be without the help of the physician.

Sir WILLIAM GAIRDNER took part in the discussion and said that he recollected many cases where the patient's life might have been saved by operative measures.

Professor W. S. GREENFIELD said that while not daring to think that Mr. Mayo Robson's statistics were inaccurate, yet it was possible that they might be capable of other interpretation. It would be most desirable that physicians should lay down definite diagnostic rules for gastric ulcer and for defining the positions of such. He thought that in the case of duodenal ulcers the risks to life were so great that operative measures should be adopted, as also in the case of ulcers of or near the pylorus, even within two inches of it. With reference to the treatment of chronic ulcer of the stomach, it was not the custom here to allow such cases to go about; the important point was to keep such patients at absolute rest. Practically he had found the employment of large doses of iron used persistently of very great value in the treatment of such.

Mr. F. M. CAIRD said that the question really resolved itself into what was to be done in the case of bleeding from the stomach. A certain proportion of cases died from hæmorrhage from the urinary bladder. The treatment of such cases, however, was to rest the bladder by putting in a tube. He would do the same with the stomach—give it absolute rest by performing gastro-enterostomy.

Mr. DAVID WALLACE asked, first, whether Mr. Mayo Robson was in favour of operating for chronic gastric ulcer which had resisted treatment and where the patient was running the risk of perforation and hæmorrhage, and in the second place what was the proportion of hæmoglobin and the number of the red blood corpuscles in a case which he would consider beyond remedial measures. He asked if Mr. Robson put any stress on the blood conditions as regards operation.

Dr. ALEXANDER JAMES said that he had never met with any case of hæmatemesis so severe as to require surgical treatment. On looking over the notes of his infirmary cases he found that he had treated 50 cases of gastric ulcer and in 46 of these hæmatemesis was severe (in one such case the red corpuscles had fallen to 450,000 and the hæmoglobin to 6 per cent., and yet the patient recovered perfectly). In the

treatment of such cases deprivation was, he thought, better than refreshment and he had not found any good to result from the use of astringents.

Dr. BYROM BRAMWELL said that at first sight it might be thought that the surgeon tended to interfere rather too much. He hardly thought that modern statistics would bear out what Mr. Mayo Robson had stated. The modern treatment of gastric ulcer was much more beneficial than that formerly employed. He considered rectal feeding and prolonged rest the most potent factors in treatment. Personally, he had never had a case ending fatally as a result of gastric ulcer alone.

Dr. JOSEPH BELL and Dr. CHARLES W. MACGILLIVRAY also spoke.

Mr. MAYO ROBSON, in his reply, stated that he had employed not antiquated statistics but very recent ones. Thus, Rodman (June, 1900) had made a very careful analysis of deaths from gastric ulcer and found that 8 per cent. were due to hæmorrhage from such ulcers. Dreschfeld gave 3½ per cent. and Lebert 3 per cent. The statistics he used had been obtained from a very large number of cases investigated. Taking these all over it might be said that from 3 to 6 per cent. died from hæmorrhage. 3 per cent. died from acute hæmorrhage and Mr. Robson did not say that these could be saved, but the other 3 per cent. died as a result of chronic hæmorrhage, and these cases could be saved by surgical means. Gastro-enterostomy acted as a drain to the stomach; it put a stop to the vermicular action of the stomach and checked hyperacidity. The operation gave almost absolute physiological rest.

The PRESIDENT conveyed the hearty thanks of the society to Mr. Mayo Robson for coming to Edinburgh and giving such an interesting communication.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 31st at 20, Hanover-square, W., Dr. Frederic Bagshawe (St. Leonards), the President, being in the chair.—The President referred in feeling terms to the death of Her Majesty Queen Victoria and proposed the following vote of condolence with His Majesty King Edward VII., which was passed unanimously:—

The Fellows of the British Balneological and Climatological Society in meeting assembled humbly approach Your Majesty with the expression of our deep sorrow at the loss sustained by Your Majesty, the Royal Family, and the nation by the death of our beloved Sovereign, Queen Victoria.

—Professor Clifford Allbutt, in opening a discussion on Anæmia and its Therapeutics, said that he undertook the task allotted to him with more than diffidence because there were among his hearers many who were far more versed in the management of anæmias by climatic and bath treatment than himself. Nevertheless, he would urge that the discussion should be confined to the treatment of these diseases by physical means or otherwise it might wander over too large a sphere to be useful. What latitude was to be given to the name of anæmia? The first division Professor Allbutt proposed was that into simple anæmias and hæmolytic anæmias, the former being indicative of some nutritive or physical deviation and the latter of the presence of a toxic cause of deterioration, such as the cachexias of lead, of tubercle or cancer, and so forth. Yet even this distinction could not be pressed, as in some anæmias supposed to be simple there might be a latent toxic cause, as, for instance, was alleged by some observers in chlorosis. In the consideration of the simple anæmias they were now deprived of some of the help which they believed themselves to possess, for a superficial drop of blood as taken for microscopical examination was by no means always, or even generally, an average specimen of the whole blood. Furthermore, the bulk of the blood mass in the body turned out, not unexpectedly, to be a factor of considerable importance. At last this factor, as it would seem, could be measured by the method of Haldane and Lorrain Smith, of which Professor Allbutt gave a brief account. From these researches it had been stated that in all anæmias there was an increase of the blood mass, or in all simple anæmias, but to clinical observers this seemed a very wide proposition. It was, however, in accordance with ordinary experience that the blood mass should prove to be increased in chlorosis. Professor Allbutt had been of opinion that in ordinary anæmias, such as that of convalescence from acute disease, that of hæmorrhages, and that which was common in (and even characteristic of) ill-nourished persons, there was a reduction of the blood as a whole, corpuscles and plasma. In chlorosis, on the other hand, the dilatation of the heart, and the voluminous, if not high-pressure, pulse seemed to signify increased blood bulk. How iron cures chlorosis was a deeper mystery than ever, as it could no longer be believed that it did so by building up hæmoglobin, but if an excess of plasma were a fault in chlorosis, removal to high altitudes would seem to be a better adjuvant in treatment than the use of spa waters, which would have the disadvantage of adding to the bulk of blood already excessive. Professor Allbutt then drew attention to the interesting work which had just appeared by Dr. George Oliver, in which were recorded many long and laborious series of observations on the composition of the blood (as also of blood-pressures) under varying conditions. Among other deductions from his observations was an explanation of the well-known apparent increase of red corpuscles in persons removed to high altitudes—namely, by a concentration of the plasma. In this view the increase was not absolute but relative. Dr. Oliver ascertained that the concentration of the plasma was due not to elevation as such, but to a greater dryness of climate; and in proof of this position he found that further experiments carried on in dry climates such as Egypt, though at sea-level, produced the same apparent increase of red corpuscles—that was, the same concentration of plasma. Professor Allbutt urged that chlorosis in the discussion should be distinguished from the anæmia of ill-nourished or impoverished persons which needed other means of treatment. Starvation anæmia was found in both sexes, but chlorosis was peculiar to women. It would not do, therefore, to take all anæmias occurring in women as chlorosis, whereby many mistakes would become current—e.g., the anæmia of arterial "hypoplasia" was not chlorosis; it was found in both sexes and was not attended by increase in the bulk of the blood.—Dr. G. A Leon (Sidmouth) said that chlorosis was very prevalent in the South Devon valleys, where the relative humidity was high. The majority of the sufferers were domestic servants, but there were also many work-girls and girls living at home. No deficiency of light, air, or food was to be noticed in the history of the cases. The teeth of the youth of South Devon were deplorably defective and no doubt this was a factor in the causation of the disease. It was interesting to observe the relationship of climate to chlorosis and the hæmorrhages—e.g., menorrhagia. To both classes of disease a damp locality and low altitude were unfavourable, but yet the chlorotic patient did not menstruate at all as a rule, and if she did the loss was but scanty.—Dr. Sansom said that he had seen some cases of chlorosis where the heart seemed to be dilated and others in which it was apparently diminished, but the physical signs, especially over the apex, were the same in both cases. He thought that in the majority of chlorotics the heart was smaller than normal. He considered that the pulmonary artery was often narrowed by hyperplasia of the vessel and said that in such cases climatological and balneological treatment would prove useful. Chlorotic patients should breathe the best oxygenated air and be induced to practise respiratory exercises.—Dr. William Hunter said that Professor Allbutt had emphasised the fact of the variability in composition and constitution of the blood, and he (Dr. Hunter) would allude to another feature perhaps even more important—viz., the remarkable stability of the blood, not only of its corpuscles but of its plasma, under the most diverse and unfavourable influences, so that anæmia could be divided into two great classes. The first was that associated with all sorts of wasting diseases, and in that form the anæmia was very slight. Starvation or deprivation of food caused little change in the blood though it diminished its bulk, as it did that of ordinary muscle. The other class of factors affecting the blood was that which Professor Allbutt had very properly drawn special attention to—changes far in excess of those caused by nutritional variations—i.e., changes in the proportion of corpuscles, in the proportion of hæmoglobin, and in the fluid. Such anæmia was exemplified by the disease known as chlorosis but still more so in the toxic anæmias or hæmolytic anæmias, the agencies of which were of a totally different character.—Dr. Ewart said that clinical confusion was apt to occur between the cases of true chlorosis and those of anæmia in working girls due to dyspepsia and malnutrition from tender and decaying teeth. The latter form remained refractory to

treatment and apt to relapse so long as the cause was overlooked and unrelieved. Among the pyrexial cases sometimes occurring in young women he had for some years recognised two groups; in the much larger group the pyrexia was simply due to the results of dental disease, in the much smaller group the cause was not obvious and this might for the present be distinguished as the group of true pyrexial chloro-anæmia.—Dr. Collins and Dr. W. V. Snow (Bournemouth) also spoke.—The meeting was adjourned to March 15th.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 30th, Dr. Robert Jardine, the President, being in the chair.—The President showed a case of Opacity of the Cornea in the New Born. After birth the right cornea was noticed to be hazy, getting denser towards the centre. The pupil was difficult to distinguish, but reacted to strong light. Examination showed irregularity of surface epithelium of the cornea, while the underlying tissue had discrete spots of a fluffy appearance closely packed together. No vessels or tracts of such were seen. The opacity gradually cleared and on the seventh day when shown at the meeting was only visible at one side. The condition was probably due to compression of the eyeball during parturition, as the right upper eyelid and the right temple were bruised.—Dr. J. Edgar showed specimen and read notes of a case of Complete Tubal Abortion in which the intact three weeks' old ovum was found lying in the pouch of Douglas. The patient, aged 30 years, a nullipara, was admitted to the Samaritan Hospital in a collapsed condition and complaining of pain most severe in the left iliac region. The abdomen was distended and tender and a soft boggy mass was felt per vaginam behind the uterus. The abdomen was full of blood and the left tube was dilated at the outer end to the size of the index finger and was patent. The patient made a good recovery.—The President and Dr. Munro Kerr each read notes of cases of Sudden Death in the Puerperium from Pulmonary Embolism. In one case the heart was shown with a large ante-mortem clot in the right ventricle extending up into the pulmonary artery.—The President read a paper on a rare case of Spontaneous Rupture of the Uterus occurring without warning and no obstruction to labour. The patient, a woman, aged 32 years, vii.-para, was brought into the Glasgow Maternity Hospital at 11 A.M. on Jan. 26th, 1900, owing to hæmorrhage early in the first stage. Dr. Jardine examined her one and a half hours after admission. The bleeding had ceased, the pains were good and increasing in force, but the patient complained of pain low down at the left side of the abdomen. The child presented in the first position. The uterus was not overdistended and showed no signs of internal hæmorrhage. The cervix was of the size of a crown piece; the membranes were intact. Labour seemed to be progressing naturally, so nothing was done. At 2 P.M., three hours after admission, the patient had a violent pain and screamed out that something had given way. She had three violent uterine pains in quick succession and then collapsed completely. The resident, Dr. W. F. McEwen, found the os fully dilated and intact and the head engaged. He delivered with forceps without difficulty and the birth of the child was followed by a quantity of blood-clot, the placenta being removed at once. A large tear was now noticed involving the cervix and extending upwards in the long axis of the uterus to near the fundus. The rent was plugged with iodoform gauze and a saline infusion and stimulants were given, but the patient died in a few minutes, just as Dr. Jardine arrived. Dr. A. R. Ferguson, pathologist, made a histological examination of the uterus. The muscular fibres were degenerated at the seat of the rupture, many being swollen and hyaline in appearance, and nuclear staining practically absent. Similar appearances were noticed at a distance from the seat of the tear. The muscle fibres at the seat of the tear were for the most part atrophied and shrunken and in many places showed transverse or irregular fractures of muscle substance, nuclear staining being absent. The elastic tissue fibres were relatively scanty near the ruptured edge and stained more feebly than elsewhere, whilst many were broken up and presented slight irregularity of contour. Dr. Jardine referred to a similar case occurring five years ago in a nullipara, there being also no obstruction to labour to account for the rupture. He also referred to a case reported by Dr. Michael Poroschin in the *Centralblatt für Gynäkologie*, February, 1898, which was at first diagnosed as one of accidental hæmorrhage. Dr. Jardine thought that the hæmorrhage in his own case might have been due to incomplete rupture, as in Dr. Poroschin's, since the patient complained of pain in the left side, and that later the tear extended and became complete, the involvement of the cervix being due to forceps delivery. A case of Hindle's was reported in the *British Medical Journal* of Feb. 10th, 1894, where the elastic tissue was almost entirely absent, and rupture was ascribed to this. Such cases of rupture could not be avoided, as there was no obstruction to labour and no warning till it actually happened.—Dr. A. W. Russell read notes of a case of Placental Polypus after Full-time Labour and showed the specimen which was of the size of a small hen's egg. There was more or less persistent hæmorrhage in the puerperium and the polypus being discovered as the cause was removed.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 31st, Dr. Wearne Clarke, the President, being in the chair.—Dr. G. Wilkinson showed a boy, aged 10 years, suffering from Spontaneous Dislocation of the Hip occurring during enteric fever six months previously.—Dr. A. Rayner showed (for Dr. J. W. Martin) an Ovarian Sarcoma removed from a girl, aged 17 years.—Mr. S. Snell introduced a man, aged 36 years, from whom he had removed an Encapsuled Spindle-celled Sarcoma from the floor of the orbit.—Mr. Snell showed the specimens from a case of Sarcoma of the Choroid recurring in the orbit. In July, 1897, the sclerotic was punctured for detached retina. At this time if a sarcoma was present it must have been very small and have escaped detection. In November, 1898, the patient was again seen, when the eyeball was filled with an intra-ocular growth (sarcoma). When seen next, in the early part of May, 1900, the growth was springing from the orbit, chiefly its floor. This was removed and the orbit was cleared out, and chloride of zinc paste was applied, since which time there had been no recurrence. The patient was a man, aged about 60 years. The tumour was a large round-celled sarcoma.—Dr. S. White showed the following cases:—1. Two women with Unusual Breast Tumour. 2. A woman from whom he had removed the Right Upper Maxilla for Sarcoma. 3. A youth the subject of Paralytic Talipes Equinus whose tendo Achillis had been divided into three vertical slips, two of which had been utilised for lengthening the contracted tendon, while the third slip was brought subcutaneously to the front above the outer malleolus and attached to the extensor of the toes. The patient was able to flex the ankle-joint and the deformity was entirely overcome. 4. Seven cases of Resection of the Knee-joint for disease. In each case the synovial membrane, the patella, and all diseased cartilage and bone were removed and the femur and tibia were united by two silver-wire sutures. No drainage was employed but the posterior half inch of the skin wound on either side was left open. Rigid asepsis was enforced and in all the cases the wound healed without suppuration under the first dressing. Bony union had taken place in all. 5. Three cases of Gastro-enterostomy for Fibrous Stricture of the Pylorus with Gastric Dilatation. In all three symptoms of obstruction had been present for upwards of two years and had been entirely removed by operation. In one case the patient had had three attacks of gastric tetany. The method of operating had been to implant the upper end of the jejunum on the anterior surface of the stomach by simple suturing without any mechanical support.—Dr. H. Peck read a paper on an Outbreak of Diphtheria in a Boarding School considered with regard to the Value of Bacteriological Examination. The school, which was well situated, dry, and in good sanitary condition, had about 50 boarders and 50 day scholars. On Oct. 5th two boarders complained of sore-throat and bacteriological examination showed the presence of diphtheria bacilli. The day school was dispersed and one boarder, A B, was allowed to return to her home on the understanding that she would not be allowed to return to school until swabbings had been taken from her throat and found satisfactory. A third case occurred on Oct. 8th. Swabbings were taken from the throats of all the boarders, boarding teachers, and domestic servants, and on Oct. 13th all boarders who had shown negative results were removed to another house, while the three patients and two who had shown positive results, though they exhibited no symptoms, were separately isolated. On Nov. 5th all the scholars, with the exception of A B, reassembled at the school which had been carefully disinfected. All the boarders showed a clean bill of health bacteriologically. A B returned on

Nov. 12th, went home on the 16th, and on the 19th was reported to be suffering from diphtheria. It then transpired that this patient's throat had not been examined bacteriologically, though she had been using an antiseptic throat wash. On the 18th five other boarders were suffering from slight ailments and were removed to the second house. In these cases bacteriological examination gave three positive and two negative results. Swabbings were then taken from all the boarders and day scholars, with the result that 28 showed the presence of diphtheria bacilli and the school was "broken up," only the children who gave positive results being detained. Dr. Peck emphasised the immense value of systematic bacteriological investigation in cases of suspicious sore-throat. It was well known that diphtheria might be transmitted by individuals in perfect health but who nevertheless carried the bacilli in their throats. One such case occurred in this outbreak. An interesting point was the length of the incubation period in the case of A B, which was nearly five weeks.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.—A meeting of this society was held on Feb. 4th, Sir W. B. Dalby, the President, being in the chair.—It was resolved that the following address be presented to His Majesty the King:—

May it please Your Majesty, we, the President and members of the Otological Society of the United Kingdom, in meeting assembled this day, beg dutifully and humbly to offer to His Majesty King Edward VII., and to the other members of the Royal Family, their profound and heartfelt sympathy on the occasion of the death of our beloved Queen Victoria, and to assure His Majesty of their feelings of loyalty and devotion to his throne and person.

—Dr. Dundas Grant showed two patients upon whom he had performed a radical mastoid operation for Cholesteatoma with preservation of the lining membrane and with Korner's plastic flap. In the first case, that of an elderly woman, the cholesteatomatous débris was scraped away but the lining membrane was left. He hoped that the lining membrane would serve as a fair substitute for the pseudo-epidermic lining which they endeavoured to secure in such cases. The second case was treated in a similar way.—Dr. Milligan showed a male patient on whom the radical mastoid operation had been performed for chronic suppurative disease of the epi-tympanum and adjoining mastoid cells. The antro-tympanic cavity had been successfully grafted. The result was good, complete healing having taken place within four weeks. The amount of improvement in hearing capacity was very remarkable, especially in regard to the power of hearing conversation.—The President said that the result was so excellent as to leave little to be desired.—Mr. P. de Santi showed a patient upon whom an operation had been performed for cholesteatoma and another patient who had been operated upon for mastoid disease with gangrene of the deep soft structures and emphysema of scalp tissues.—Dr. StClair Thomson showed a patient upon whom ossiculectomy had been performed for "attic" disease.—Mr. C. A. Ballance read the notes of a Fatal Case of Temporal Bone Pyæmia. At the necropsy the pars petrosa and a portion of the occipital bone were in an advanced state of decay. No secondary pyæmic deposits were found anywhere in the body.—Dr. Adolph Bronner showed a Microscopic Section of an Epithelioma of the Cutaneous External Meatus which was at first mistaken for mastoid disease, and made some general remarks upon malignant disease of the external auditory meatus which he did not consider to be so very rare as was usually supposed, he himself having seen five or six cases within the last few years.—Mr. Ballance considered such cases rare, as also did Dr. MacNaughton Jones.—The President remarked that he had only seen one such case before.—Dr. Urban Pritchard said that he had seen very few cases of malignant disease arising in the tissues of the external meatus.—Mr. A. H. Cheatle and Dr. Milligan showed specimens of Tuberculosis of the Middle Ear.—The President related the case of a Bullet Wound through the Brain and Cerebellum, leaving no after-effects beyond loss of hearing upon one side.

MIDLAND MEDICAL SOCIETY.—The fifth ordinary meeting of this society was held on Jan. 30th, at the Birmingham Medical Institute, Dr. Jordan Lloyd, the President, being in the chair.—Mr. Gamgee showed a girl, aged 12 years, who had in the beginning of November, 1900, suffered from very severe symptoms, indicating some intracranial mischief due to middle-ear disease. There had been suppurative otitis media present for two years. The only localising symptom was tenderness over the left mastoid. The left side was explored with a negative result. Five days afterwards the right side was explored and one ounce of pus was let out from between the bone and the dura over the right lobe of the cerebellum. The patient made a good recovery.—Dr. Thomas Wilson showed a Parovarian Unilocular Cyst with Twisted Pedicle and a Retroverted Myomatous Uterus removed by abdominal hysterectomy.—Mr. Haslam showed a Renal Calculus, weighing 489 grains, that he had removed from the right kidney of a man, aged 33 years, and one, weighing 1289 grains, that he had removed two months later from the left kidney of the same patient. Symptoms had been present for 18 years.—Mr. J. Furneaux Jordan showed a specimen of Myoma of the Uterus (invading the broad ligament) with Hydrosalpinx. The specimen consisted of the uterus, containing in its interior a submucous fibroid and in its outer wall a small subperitoneal fibroid, and of a large myoma growing from the left side of the uterus, spread out on the top of which was a large pear-shaped hydrosalpinx. The operation performed was that of combined hysterectomy. On opening the abdomen with the patient in the Trendelenburg position the tumour in the broad ligament was shelled out from the broad ligament, the ovarian and uterine vessels were tied outside the tumour, and then the right broad ligament was ligatured between the uterus and the appendages. In this way the uterus, the myoma, and the hydrosalpinx were removed, while the right appendages were left behind. The ligatures were cut short and a gauze drain was carried into the vagina. The patient, whose age was 39 years, had been married for 22 years and had had two children, the youngest of whom was 20 years of age. For the last two years she had suffered from severe hæmorrhage and for five months continuously the loss had never ceased. Latterly there had been considerable pain. She was a very stout woman, absolutely blanched from hæmorrhage, and with a small, feeble, rapid pulse. Her recovery had not been perfect, as she had a stitch abscess. The operation was performed three weeks ago and she was now well.—Dr. W. J. McCardie exhibited Breuer's Inhaler for the administration of ethyl chloride.—Dr. Stacey Wilson read a paper on Intestinal Obstruction Amenable to Non-operative Treatment.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—A meeting of the Section of Surgery was held on Dec. 7th, 1900, Dr. T. Myles, the President, being in the chair.—Mr. Alexander Blaney made a communication on the Removal of Great Lengths of Intestine. He first detailed the notes of a case which had been operated on by Dr. P. J. Hayes at the Mater Misericordiæ Hospital. A boy, aged 10 years, who was brought to that institution had been run over by a wagon carrying a ton and a half of grain. The wheel passed over his lumbar region while he was lying on his face. Laparotomy was performed 17 hours after admission. The intestine was found extensively crushed, and in addition there was a long transverse rent in the mesentery. The damaged gut was removed and was found subsequently to measure eight feet four and a half inches. The boy recovered and was exhibited. He now suffered from looseness of the bowels and occasional vomiting. His appetite was abnormally great. The second part of the paper gave the results of experiments on animals in which great lengths of intestine had been removed, and an analysis of 33 cases in which over one metre of intestine had been removed in man. The conclusion drawn from these cases was that when the bowel removed was less than 200 centimetres (six feet six and a half inches) intestinal symptoms were, as a rule, absent; when more was removed intestinal symptoms were present. Children apparently stood great resections better than did adults.—The President said that the paper was one of the most interesting communications ever made to that section of the Academy. If they had not seen the patient they could scarcely have believed that a wagon bearing a load of one and a half tons could have passed over him without crushing him to death; yet apparently it produced only laceration of the mesentery. The case also illustrated the extreme difficulty of accurate diagnosis—a difficulty which was increased in the present instance by the fact that the intestine was not ruptured.—Professor E. J. McWeeney said that the very swollen appearance of a good deal of the resected portion of the gut seemed to be due to hæmorrhage into the coats, but the microscopic examination showed that the hæmorrhage was in reality slighter than the naked-eye appearance indicated. The microscope showed congestion

of both the lymphatic vessels and the blood-vessels and the most striking œdema of the coats of the intestine which he had ever seen. A point which struck him in examining a series of sections was what he might describe as the asepticity of the removed bowel. The micro-organisms were few and far between and there was no tendency to migration into the peritoneal cavity.—Mr. J. Lentaigne, Professor White, and others also discussed the case.

FOLKESTONE MEDICAL SOCIETY.—A meeting of this society was held on Feb. 1st, Dr. W. J. Tyson, the President, being in the chair. The rules of the society were revised and a committee was re-appointed "to investigate the therapeutic resources of Folkestone with special reference to the baths." Mr. F. A. Osborn of Dover was elected a member.—Dr. W. L. Chubb showed a specimen of an Anencephalic Fœtus.—Dr. Cecil Latter read a paper on the Physical Signs of Acute Pulmonary Disease. He drew attention to the necessity of differentiating between the physical signs in adults and children. The presence of fluid, for example, in a child's pleura was not always accompanied by the physical signs produced by pleuritic fluid in an adult. This was especially the case with small empyemas occurring in children. They were more often deduced from the clinical course of the disease than diagnosed by any typical signs. Another point of difference between adult and infantile chests was the more frequent absence of all physical signs in the case of children in the earlier stages of acute pulmonary attacks. A child suffering from severe broncho-pneumonia might exhibit no physical signs until the temperature was normal and the breathing was quiet. He next referred to the physical signs of pleurisy with effusion and their value in determining the proper time for aspiration. He strongly advocated the measure while the amount of the fluid was still moderate. The paper concluded with an account of some cases at the Victoria Hospital (Folkestone) bearing upon the subject.—A discussion followed in which Dr. T. Eastes, Dr. Chubb, Dr. P. G. Lewis, Dr. L. Wainwright, Dr. A. E. Larking, Mr. W. F. Chambers, Mr. W. P. Barrett, and the President took part.

ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—At the meeting of this society held at Guy's Hospital on Feb. 8th Professor A. H. Young, the President, before proceeding with the business of the meeting, proposed the following motion:—

That the members of the Anatomical Society of Great Britain and Ireland desire to record their profound grief at the death of Her Most Gracious Majesty Queen Victoria, and their deep sense of the great influence the Queen exercised on all that made for good and progress. In particular the society gratefully recalls the Queen's interest in the advancement of science. The society desires further to offer to His Majesty King Edward VII. a dutiful assurance of unswerving and devoted loyalty to his throne and person.

Mr. R. Clement Lucas (Vice-President), in seconding the motion, said that in these days of universal grief and of national mourning little need be added to the remarks of the President to express the loss the members of that society felt they had sustained by the death of their beloved Queen or to record their respectful sympathy with the Royal Family. He had been chosen as a member of the staff of Guy's Hospital to second the motion because the meeting was being held in Guy's Hospital, a hospital which had benefited by the interest His Majesty King Edward VII. had taken in it and by the great honour he had bestowed upon it by accepting the position of President. The members of the society were loyally and devoutly attached to the throne and he had little doubt that His Majesty the King would show the same interest in the advancement of science as had been evinced by his revered and Royal mother.—The members signified their unanimous acceptance of the motion by standing.

MEDICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Feb. 6th, Mr Alexander Wilson, the Vice-President, being in the chair.—Dr. D. McKeown in Observations on 2000 Operations for the Removal of Post-nasal Adenoids pointed out that an exaggerated diagnostic importance was attached to the "characteristic facial aspect"; that stage should not be the dominating factor in determining treatment; that certain symptoms described as reflex might be otherwise explained; that wherever adenoids were found with affections dependent on unstable conditions of the nervous system operation was indicated; that the rarity of incontinence of urine was probably only apparent; that "imperfect aeration of the blood" was insufficient to explain the symptoms put to its account; and that the teaching in regard to auditory results of operation had to be supplemented by two facts—immediate improvement and a possible ultimate impairment.—Mr. C. E. Richmond made a short communication on Biliary, Vesical, and Prostatic Calculi, showing the specimens, which included a vesical calculus weighing nine and a quarter ounces.—Dr. Brooke read a paper on the Skin Eruptions found in Arsenical Poisoning. The paper was illustrated by means of lantern photographs.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Feb. 7th.—Dr. J. Melvin read a paper on Spasmodic Asthma, illustrating various points by references to cases in his own practice. He dwelt especially on the treatment, pointing out with regard to climate that a suitable locality for any individual case had to be discovered experimentally. Diet was important. Many drugs might have to be tried in succession ere the most useful was hit upon.—Dr. A. Wallace, Mr. G. W. Malim, Mr. W. Stanwell, Mr. J. P. Walker, and Dr. E. Sugden discussed the paper.

Reviews and Notices of Books.

Text-book of the Embryology of the Invertebrates. By Dr. E. KORSCHELT of Marburg and Dr. K. HEIDER of Berlin. Translated from the German by MATILDA BERNARD. Revised and edited, with additional notes, by MARTIN F. WOODWARD, of the Royal College of Science, London. Vol. IV. London: Swan Sonnenschein and Co., Limited. 1900. Pp. 594. Price 18*s*.

THIS authoritative work has now reached its conclusion. The present volume, which is the fourth of the translation, contains an account of the development of the Amphineura, the Lamellibranchiata, Solenoconcha, Gastropoda, Cephalopoda, Tunicata, and Cephalochorda. The descriptions given in the text of the successive stages of development in these groups are exhaustive up to the year 1893. Since that period considerable additions have been made to our knowledge by the labours of many naturalists, with the result that it has become necessary to supplement the statements made by Professor Korschelt and Professor Heider by the introduction of footnotes. These have been very judiciously added by Mr. Martin F. Woodward, and in some instances fill up lacunæ which existed when the origina was written; in other instances they modify the results that had then been obtained; and in others again substitute new and more correct accounts derived from the concordant researches of more recent investigators for the older and less accurate observations. Mr. Woodward has greatly added to the value of the translation by appending to the excellent bibliography given by the authors a list of the more important articles that have been written since the date of publication of the German work. Thus, in addition to the 113 articles on the Tunicata supplied by Professor Korschelt and Professor Heider in the bibliography of that order, Mr. Woodward adds no less than 37 references to important articles and treatises that have appeared in the course of the last seven years. The student, therefore, will have but little trouble in following up certain lines of inquiry and completing his knowledge of all that has been done up to the end of the last century.

The general mode of treatment of the subject of embryology adopted by the authors may best be understood by selecting one of the orders, such, for example, as the Gastropoda. In dealing with this order Professor Korschelt, by whom the description appears to have been chiefly written, discusses in succession the oviposition and character of the egg-capsules and the egg, in which it is shown how in most Gastropoda the spawn forms disc-shaped or long hyaline gelatinous masses sometimes inclosing several hundred thousand eggs which are fertilised in the body of the

mother; in others the ova are laid singly and are fertilised in the water. To this succeeds an account of the cleavage and the formation of the germ layers; then the rise of the larva and its relation to the adult form, including the trochophore and veliger stage in Patella and the corresponding stages in Paludina; then follows a description of the primitive kidneys. The development of the external form of the body in the different divisions of the Gastropoda, as in the prosobranchia, opisthobranchia, pteropoda, &c., is given with the formation of the various organs, as the shell, nervous system, sensory organs, pedal glands, alimentary, respiratory, circulatory, and generative systems. It will be seen from the above *résumé* that the account of the development of this order is very complete, and the same may be said of the lamellibranchia, cephalopoda, and other divisions of the great class of mollusca. Nothing can show better the immense extension of our knowledge of the subject of development of late years than a comparison of the space occupied in Balfour's well-known Comparative Embryology, published in 1880, as compared with that in Professor Korschelt and Professor Heider. In the former work the consideration of the embryology of the mollusca only occupied 55 pages, whilst in the latter it takes up nearly 600 pages. There is, however, still room for further investigations. To give an example only, are the so-called arms or brachia of the cuttle-fish processes of the foot, as Professor Huxley believed, or are they, as Grenacher held, representatives of the velum, the foot being absent in this group? The question still remains unanswered, though the evidence seems to point, upon the whole, to the correctness of the view held by Professor Huxley. Professor Korschelt, in admitting this, remarks that a fact which causes surprise and at first sight is unfavourable to it is that some of the arms shift to the dorsal side of the head, being here found behind the mouth. "This makes it difficult to understand how the foot could have become transformed in this way, but when we see how extremely plastic it is, judging from different transformations it has undergone in the Lamellibranchia, the Prosobranchia, the Heteropoda, and the Pteropoda, further modification is not so inconceivable, especially when we find that the lateral parts of the foot in certain Prosobranchia (diotocardia) even develop tentacular structures."

The lady, Matilda Bernard, whose name appears on the title-page as the translator, deserves great credit for the care and fidelity with which she has rendered the original into pure and idiomatic English. We have opened the volume in many places and compared the translation with the original and in no instance have we found any slovenly expression or any incorrect rendering of the German. The illustrations are not only very numerous but extremely good, while the general get-up of the volume in regard to paper and print renders it very pleasant to read.

A Text-book of Practical Medicine. By WILLIAM GILMAN THOMPSON, M.D., Professor of Medicine in the Cornell University Medical College, New York City; Physician to the Presbyterian and Bellevue Hospitals, New York. Illustrated with 79 Engravings. London: Henry Kimpton. 1900. Pp. 1011. Price 21*s*.

THE author of this work states in his preface that his aim has been to offer to students and practitioners a comprehensive review of up-to-date medical practice. He has made a special effort to set forth clearly and simply those facts and principles which have received clinical proof and to avoid those theories which have merely a speculative basis. We consider that Dr. Thompson has carried out his objects. One of the features which distinguish this text-book from those hitherto published is the care with which the treatment of the various diseases is described. This is evident throughout the volume. Curative medicine is assumed to be the final and avowed object of those who may read this work, and the therapeutical sections have therefore been made unusually detailed and complete.

The book is divided into nine parts. Part I. deals with Infectious Diseases. It is instructive to note how with the publication of new text-books of medicine, or with the issue of fresh editions of older ones, the section concerned with "infectious diseases" is gradually getting larger and larger as our knowledge of bacteriology increases. In this volume pneumonia, rheumatism, tuberculosis, and gonorrhœal arthritis are all included. Probably some of the "diseases of the blood" will ultimately find their way under the same heading. The chapter describing Typhoid Fever is a very good one, especially that part dealing with the treatment. The author especially advocates hydrotherapy according to the method advocated by Brand—that is to say, the application of friction to the entire body while immersed in the cold water. In this country the use of the cold bath in the treatment of typhoid fever is very extensively employed, but the "rubbing" is not so generally used. Dr. Thompson, however, lays great stress on the importance of this measure and considers that Brand's method would be more appropriately termed treatment by "rubbing" than by "tubbing." The object of the friction is primarily to apply a mechanical stimulus to the cutaneous surface over a large area, thereby reflexly stimulating the entire nervous system and also the vaso-dilator nerves of the periphery, which allow of the determination of increased supply of blood to the surface to be cooled by the water. Dr. Thompson has had most satisfactory results by employing this system of treatment.

The account given of malaria is very full and complete. The varieties of malarial parasites are accurately described and the symptoms of the different types of malarial feve clearly recounted. Dr. Thompson considers that quinine in the treatment of malaria furnishes the best illustration of the action of a true specific remedy known to therapeutics and he is inclined to agree with the statement made by many recent writers that fevers which do not yield to it are not malarial. He further states that in no case of malaria is it desirable to give quinine during the height of the fever, for it may not be then absorbed and is often vomited.

The author defines pneumonia as "an acute, infectious, febrile disease, caused by inflammation of the lungs, with toxæmia." This is scarcely accurate; pneumonia is now regarded as an acute, infectious, febrile disease with local manifestations in the lungs, but the pulmonary process is not strictly an inflammation, and the disease is certainly not "caused by inflammation of the lung," but by a micro-organism. The clinical description of the disease, however, and the treatment are well given. In speaking of the latter the author describes some experiments he made to determine the penetrating power of local heat and cold; this was in reference to the local measures of treatment sometimes adopted in pneumonia—by hot poultices or the application of ice. Specially constructed thermometers inserted deep into the chest through empyema sinuses were unaffected by external poultices or ice-bags. Experiments on dogs showed no change in the lung, neither congestion nor anæmia, when similar applications were applied to the chest wall.

We particularly commend the remarks on the examination of the contents of the stomach in cases of gastric disease. In recent years there has been a tendency to trust too much to the results of such chemical analysis to the exclusion of clinical observation. Dr. Thompson points out very justly that analyses of gastric contents are merely of corroborative value in connexion with a comprehensive study of each case, including the history, physical examination, and general symptoms, and he adds, "attempts to isolate them for

positive conclusions as to diagnose or indications for treatment will result in grave error." We cordially agree with the author's remarks.

Comparative tables are freely used as an aid to differential diagnosis; this affords a ready and great assistance for reference. The busy practitioner can see at a glance the main points that are relied upon in distinguishing from one another those diseases which bear mutual resemblances.

There is one matter in which we entirely disagree with the author in his classification of diseases. He has set down "jaundice," "dilatation of the heart," "dilatation of the stomach," "ascites," &c., as though they were distinct diseases instead of symptoms or the results of diseases. We admit that this arrangement is convenient for teaching purposes, but the student is always too apt to regard these conditions as primary disorders and to forget to search for their true origin.

Report on an Experimental Investigation into Methods of Inoculation against Rinderpest. By LEONARD ROGERS, M.D., B.S. Lond., F.R.C.S. Eng., officiating Imperial Bacteriologist to the Indian Government.

THE Government of India have recently issued a report on the above subject showing the results of some most valuable and painstaking observations which have been made by Captain Rogers of the Indian Medical Service and his veterinary assistant Lieutenant Walker, A.V.D. The objects of the investigation were to test different methods of inoculation recently adopted so successfully in South Africa when dealing with rinderpest outbreaks, and to report upon the prospects of practically applying similar measures in India. Captain Rogers has entered into the subject most exhaustively and has given extensive trial to inoculation with Koch's bile, Edington's glycerine bile, filtered bile, serum alone, Turner and Kolle's method, and the serum re-inoculation method. The advantages and disadvantages of each are fully discussed and the author's conclusion set out to the following effect. With Koch's bile method the principal advantages are that only a single inoculation is required, and there is no reactionary fever which would be likely to produce loss of milk in dairy cattle or abortion in pregnant animals. The principal disadvantages are, first, the difficulty of obtaining suitable biles in sufficient numbers in village outbreaks, and, secondly, the short duration of the immunity. In connexion with the latter it is curious to note that in the case of hill cattle the immunity produced did not last even for a month in many instances. Again, complete immunity is not obtained for ten days after the inoculation, and during this time the whole herd may have contracted rinderpest in a fatal form. Edington's glycerine bile method gives an immunity of long duration, and the biles can be kept in a condition in which they can be used for upwards of a year. On the other hand, full immunity is not obtained for at least ten days, infection is introduced by this method, and a double inoculation is necessary, the latter procedure requiring the collection of all the animals a second time. With this method a large proportion of the cattle on the plains failed to react, whilst in the hill animals it was not only useless but almost always fatal. With the filtered bile method a week's time is gained over Edington's method and biles which have become putrid can be utilised. This is also dangerous to the hill cattle. The use of serum alone affords immediate and full immunity, and will modify an attack of the disease which an animal may have contracted one or two days before its use. The serum can be prepared in any quantity and is well spoken of by the author. To Turner and Kolle's method the most serious objection is that it is useless in the Kumaon hill cattle, as in these very susceptible animals the results obtained were erratic. The serum re-inoculation method consists in using a sufficiently large dose of serum on one side of the animal to counteract a small dose of rinderpest blood injected on the other side at the same time. It gives a mild and safe reaction, so that even hill animals can be passed through a mild attack of rinderpest with little, if any, loss. The only disadvantage, a minor one, is that a second inoculation is necessary in some of the animals. In conclusion, Captain Rogers states: "While, then, the re-inoculation method presents decided advantages in this country, it must be left to further experience in the field to decide whether this advantage is sufficiently great to overcome the greater trouble that it involves in the case of plains animals; but, on the other hand, in the case of hill cattle it alone gives good and safe results. ..... In the event of sufficient serum for carrying out these methods not being at any time readily available then the glycerine and filtered bile methods will be of the greatest value."

Verhandlungen des Congresses für Innere Medicin. (*Proceedings of the Congress on Internal Medicine.*) Edited by Dr. E. VON LEYDEN and Dr. EMIL PFEIFFER. Wiesbaden: Verlag von J. F. Bergmann. 1900. Pp. 638.

THIS volume contains an account of the eighteenth congress on Internal Medicine held at Wiesbaden from April 18th to 21st, 1900, of which we gave a report in THE LANCET at the time.

The opening address by Professor Dr. Rudolf von Jaksch is reported in full, the title being "Internal Medicine in the Nineteenth Century and its Probable Development in the Twentieth Century." An important discussion took place on the treatment of pneumonia, being introduced by Professor D. Friedrich von Korargi (Budapest) and Professor Dr. P. K. Pel (Amsterdam). A large number of speakers subsequently expressed their views on the subject, including Professor Nothnagel of Vienna, Professor Senator of Berlin, and Professor Baümler of Freiburg. Another interesting discussion was that on Endocarditis and its Relations to Other Diseases, introduced by Professor Litten of Berlin, and amongst the speakers were Professor von Jürgensen of Tübingen and Professor His of Leipsic.

A large number of communications were read, some of them being of considerable interest—such as: the Gouty Affections of the Stomach and Intestine, by Dr. Karl Grube of Neuenahr and London; the Pathology of Paroxysmal Tachycardia, by Dr. August Hoffmann of Dusseldorf; on Cyanosis, by Professor Hermann Vierordt of Tübingen; and on Phlorhizin-Diabetes, by Professor Arthur Biedl of Vienna and Dr. Rudolf Kolisch of Vienna. There are upwards of 40 papers published. These, with descriptions of certain clinical demonstrations, form a valuable collection and the writers may be congratulated on having published a volume which is likely to prove of considerable value, especially for purposes of reference.

Diseases of the Heart: Their Diagnosis and Treatment. By ALBERT ABRAMS, A.M., M.D. Heidelberg, Consulting Physician for Diseases of the Chest, Mount Zion Hospital, and the French Hospital, San Francisco. Chicago: G. P. Engelhard and Co. Pp. 178. Price $1.

THIS book will have to undergo a considerable amount of revision and alteration before it can be considered a reliable work on diseases of the heart. At present it is full of inaccuracies and expressions of opinion which are far behind the times and which have long been disproved by the most competent observers. A few illustrations will suffice. In speaking of ascites the author says: "The chief cause of cardiac dropsy is disease of the mitral valve, and especially *mitral stenosis*" (the italics are quoted). Again, in the section on Dilatation of the Heart we find the remarkable statement

"Dilatation of the heart is an evidence of weakness of the organ and it usually follows hypertrophy." This is misleading, for although dilatation may certainly ensue in a heart which is hypertrophied, in the majority of cases dilatation precedes hypertrophy. In describing endocarditis Dr. Abrams writes: "The malignant form is of microbic origin and is secondary to some infectious disease. The majority of cases develop during an attack of croupous pneumonia." We differ from both these statements. Primary infective endocarditis does undoubtedly occur, and the most common form of micro-organisms found in relation with this condition belong to the septic and pyogenetic type (streptococci and staphylococci).

Dr. Abrams has also some original ideas on methods of diagnosis. He uses the x rays to diagnose a dilated stomach, and by the same means has actually discovered that dilatation of the right heart follows severe muscular exertion, such as "century runs"! The author should make himself acquainted with the safety-valve action of the tricuspid valve before enunciating as a new fact a condition which is known to every senior medical student. Dr. Abrams is evidently much impressed with the value of the Roentgen rays. We do not think the following sentiment will be generally accepted: "The vast amount of literature that has ..... accumulated has convinced the most skeptical that the Roentgen rays are invaluable in cardiac diagnosis"; or that his concluding remark on this subject will generally commend itself: "Without a Roentgen ray apparatus no physician can lay claims to scientific refinement in cardiac diagnosis."

We could multiply criticisms similar to the above, but we have already allotted sufficient space to a publication which we cannot in any way recommend.

A Practical Guide to Garden Plants. By JOHN WEATHERS, F.R.H.S., late Assistant Secretary to the Royal Horticultural Society, Horticultural Lecturer to the Middlesex County Council, &c. London: Longmans, Green, and Co. 1901. Pp. xii.-1192. Price 21*s.* net.

THE chief aim of Mr. Weathers in writing this work "has been to produce a book that will be unique and of real use, not only to amateur gardeners, for whom it is particularly intended, but also to those engaged professionally in horticulture." The arrangement of the volume is very good. The first portion consists of a glossary in which are defined the various technical words, &c., used in descriptive botany. The explanations given are both numerous and concise; also illustrations are freely used, so that the exact meaning of any particular term can hardly be misunderstood. The presence of a glossary must not, however, be taken as indicative of the occurrence of plant descriptions bristling with technical expressions. We are pleased to note that it would hardly be possible to describe plants in simpler language.

Part I. deals with the life-histories of cultivated plants; it contains much information concerning the nature of plants from many points of view. For instance, structure, morphology, and some physiological processes are briefly entered into. Propagation is very clearly and fully described, and, where necessary, illustrated. A few errors may be found in the earlier portions of this section. For example, on page 25 occurs the following statement:—"It (the embryo) may occupy only a very small space as in wheat, onion, &c., and remain imbedded in a substance at one time called '*albumen*,' but now more generally called '*perisperm*.'" It is hardly necessary to point out that it is the endosperm which is synonymous with the albumen, and of course endosperm and perisperm are two quite different tissues, which, however, fulfil the same functions. Then, again, the language is sometimes rather loose, thus making some of the statements open to misconception. For instance, on page 30 we read, "It is evident, therefore, that the sap from the roots ascends by the vessels in the cambium and young wood." The presence of vessels in a cambium would indeed be remarkable.

Part II. occupies by far the greater portion of the book. It enters into the consideration of annual, biennial, and perennial plants. Lists, which will prove of great use, are given of annuals, rock-plants, aquatic plants, and ornamental trees, together with general directions as to their culture and arrangement. As regards the arrangement of plants we notice that in some special cases—e.g., rock-gardens and flower-borders—articles published elsewhere are made use of. The one relating to the "Formation of a Rock-garden" is particularly instructive. The last section of Part II. gives descriptions, mode of culture, and other information of a very large number of plants, in fact, over 1000 genera are mentioned.

Parts III. and IV. are concerned with the cultivation of fruits and vegetables respectively.

In conclusion, the work is extremely good and contains all necessary information for the cultivation of plants. To amateurs it will prove invaluable.

LIBRARY TABLE.

Laboratory Directions for Beginners in Bacteriology. By VERANUS A. MOORE, B.S., M.D. Boston: Ginn and Co. London: Edward Arnold. 1900. Pp. 143. Price 4*s.* 6*d.*—This book consists of a series of exercises or bacteriological experiments for beginners. Step by step the student gradually makes his acquaintance with applied bacteriology and his attention is drawn to the great importance of bacteriological examination as a means of diagnosis. His first exercise is directed to the cleaning of glassware, his second to the plugging of tubes and flasks and to the sterilising of glassware, his third to the preparation of culture media. In all there are 64 exercises, in the course of which the search for pathogenic organisms in tissues, in water, and in excretions is described. The exercises include the testing of the efficiency of disinfectants. We regard the work as an excellent guide for the study of practical bacteriology and we know no better method of inculcating practical bacteriological knowledge than by setting a pupil a series of exercises on the plan and in the order given in this valuable little work.

An Introduction to Modern Scientific Chemistry. By Dr. LASSAR-COHN, Professor in the University of Königsberg. Translated from the second German edition by M. M. PATTERSON MUIR, M.A., Fellow of Gonville and Caius College, Cambridge. London: H. Grevel and Co. 1901. Pp. 356. Price 6*s.*—Concerning the title of this book, what is chemistry if it is not scientific? The superfluous adjective is used, perhaps, because the present book is written in the form of popular lectures, and thus a kind of apology for putting the subject popularly is tendered in the word "scientific." Surely the science of chemistry is preserved even when it is expounded in popular language. Dr. Lassar-Cohn is the author of "Chemistry in Daily Life," which also was translated by Mr. Muir, and the present book is equally successful, we think, in regard to its presentation of chemical facts and principles in a popular style, although the work before us is more adapted than the previous one for the really earnest student of natural science. It should prove an excellent companion to a laboratory course of elementary chemistry. The book fulfils a distinctly educational purpose. A section is devoted to a consideration of the classification, composition, and constitution of carbon compounds.

Urinary Diagnosis and Treatment. By JOHN W. WAINWRIGHT, M.D. Chicago: G. B. Engelhart. 1900. Pp. 140. Price $1.—The author has extracted from the literature

on the subject the simplest methods of chemical and microscopical examination of urine and the latest theories concerning routine treatment of the conditions found. He has certainly reduced the analysis and examination of urine to the simplest possible form, and he gives, perhaps, for the busy practitioner sufficient information. But the omission of certain methods and the details of a few highly accurate, though perhaps complicated, processes may in some instances lead to the loss of a factor in diagnosis. At the end of the book is a series of excellent plates of urinary casts and crystalline deposits.

Appeal Cases under the Sale of Food and Drugs Acts, 1875 and 1879, and the Margarine Act, 1887. By B. SCOTT ELDER. London: Butterworth and Co., 12, Bell-yard. 1900. Pp. 90. Price 3*s.* net.—This book consists of a series of excerpts from various appeal cases under the Food and Drugs Acts, 1875 and 1879, and their selection has been undertaken by Mr. Elder, who is the chief inspector of food and drugs and weights and measures for the county of Durham. Of course, some of these appeals could hardly occur now under the new Act of 1899. The case in which baking-powder was held to be not an article of food is one in point, for baking-powder is now clearly included as an article of food in the new Act. The book will be consulted with advantage by those who are concerned in the institution of proceedings against presumable offenders.

The Food Inspector's Handbook. By FRANCIS VACHER, F.R.C.S. Edin., medical officer of health of Cheshire. Third edition. Illustrated. London: The Sanitary Publishing Co. 1900. Pp. 210. Price 3*s.* 6*d.*—This is a compilation of notes which should be very instructive to the food inspector and help him considerably towards the efficient discharge of his duties. An account of the food inspector's qualifications and obligations occurs in the first chapter, Mr. Vacher adding the attributes which should be possessed by the model inspector. The statutory powers are then discussed, while the practical side of the subject is approached in Chapter III. dealing with animals, carcasses, and butcher's meat, &c. We do not find any reference to a chemical means for identifying horseflesh. It would be interesting to know whether the iodine test depending upon the presence of glycogen was of any real value. Fish, fruit, vegetables, and fowl and preserved provisions form the subject of succeeding chapters. The final chapters deal with articles of food which for the most part come up for inspection and testing under the Sale of Food and Drugs Act. It appears to us that the food inspector will find in this little book all that he wants to know in connexion with the characteristics of various foods.

JOURNALS AND MAGAZINES.

New Zealand Medical Journal.—This periodical, which had for some time ceased to appear, was resuscitated in 1900. The first number of the new series was published in Wellington, New Zealand, in October; the second number, which is dated in November, consists of 50 pages and contains six original articles, the text of a proposed new Medical Practitioners Registration Bill, editorial paragraphs, and a variety of miscellaneous intelligence. In the opening article Mr. H. A. de Lautour of Dunedin describes his method of using the x rays for the localisation of foreign bodies embedded in the tissues. He wraps the sensitive plate in opaque paper and places it in a wooden box, the lid of which is crossed on the inside by several brass wires and on the outside is marked with lines corresponding to the wires. The brass wires are reproduced in the radiograph and serve to locate the exact centre. The box slides on a horizontal graduated steel scale attached to the base of the upright which carries the focus tube. When one radiograph has been taken the patient crosses over to the other side of the table and another radiograph is taken with a fresh plate. Tracings of each are then taken on one sheet of paper, always preserving the centre, so that double shadows of the foreign body are shown.

The *Journal of the Sanitary Institute*, which has just been issued, contains a long article by Professor A. Celli of Rome on Researches on the Propagation of Malaria and the Precautions to be adopted in Unhealthy Districts. After describing some of the opinions of other investigators he gives reasons for deciding that the dapple-winged gnat, known as anopheles, is the propagating agent. He then describes the life-history of the insect, and sets out a series of corollaries for the hydraulic engineer, for the sanitary engineer, and for the agriculturist, in which are detailed the steps that can be taken to prevent the multiplication of the anopheles and other measures against the spread of the disease. The concluding portion of the paper gives instructions for the self-protection of labourers in malarious places. The paper is illustrated by some of Professor Celli's photographs showing methods of protecting houses and shelters. The same journal contains papers of Dr. F. Tidswell, medical officer of health of Sydney, New South Wales, and Mr. S. M. Kaka, medical officer of health of Karachi, India, on their personal experiences of the plague in Sydney and Karachi, with descriptions of the preventive measures adopted. Some microscopic photographs of the plague bacilli and dissections of plague-infected rats and guinea-pigs appear in the paper.

Mercy and Truth.—The February number contains an illustrated description of the Church Missionary Society Medical Mission recently established in Riley-street, Bermondsey.

New Inventions.

HALL'S PATENT BATH APPLIANCE.

WE have received from Mr. T. Bernard Hall, 119, Colmore-row, Birmingham, a description and drawings of an appliance intended for use in asylums, infirmaries, hospitals, and similar institutions for the purpose of easily lowering and raising infirm, bed-ridden, and other invalids in and out of baths without distress to the patients or difficulty to the attendants. It can be fitted to any existing bath or supplied with new baths complete. The special feature of the appliance is a wooden grid or carrier on which the patient is laid and which is of a size and shape to suit the bottom of the bath. This grid is suspended by light galvanised wire or other ropes which pass over pulleys fixed directly above the bath, and are raised or lowered by turning a hand-winch provided with a worm and wheel and made fast to the wall in any convenient position. When a patient is to be bathed the grid is allowed to rest on two strips of wood laid across the bath, the patient is placed on it, the grid is slightly raised by turning the winch handle to allow the removal of the strips of wood, and the patient is then gently lowered into the bath. If the ropes are unhooked from the grid it may be used for carrying an invalid to bed or in connexion with an ambulance. The appliance does not in the least interfere with the ordinary use of the bath, as the grid may at any time be raised up out of the way. The invention is ingenious and might be useful in the houses of private patients as well as in the public institutions whose possible needs have been specially aimed at.

LUNACY IN BRISTOL.—At the meeting of the Bristol Board of Guardians held on Feb. 7th it was reported that on Jan. 1st, 1901, there were 1360 lunatics chargeable to the Bristol Union. Of this number 779 were in the Bristol asylum, 443 were in workhouses, 43 were in other institutions, and 95 were resident at their homes with relatives. The clerk stated that there was annually a steady increase in the figures.

THE LANCET RELIEF FUND.

For Members of the Medical Profession and their Widows and Orphans when in Distress.

——:o:——

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THOMAS WAKLEY, Jun., L.R.C.P. Lond.

HON. AUDITOR.

SIR HENRY PITMAN, M.D. Camb., F.R.C.P.

——:o:——

THIS FUND will be provided year by year in the month of January to the amount of at least £300 solely by the Proprietors of THE LANCET, and administered free of cost, for the purpose of affording immediate pecuniary assistance to Medical Men, or their Widows and Orphans, *in cases of Acute Distress and Emergency*, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require.

Applicants must satisfy the Almoners of the Fund that they are qualified under the following regulation:—

* "The recipients shall be such persons as satisfy the Almoners that they possess one or other of the following qualifications—that is to say: (*a*) That the applicant holds a registered medical qualification, and that he has fallen into pressing need of immediate pecuniary relief; or (*b*) That they are persons who have been, previously to the date of application, legitimately dependent upon some person holding a registered medical qualification, and that they have pressing need of immediate pecuniary relief."

(*In the case of Widows and Orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.*)

To ensure the utmost despatch, the "Application Form" upon the other side should be filled up and forwarded (in an envelope superscribed "THE LANCET Relief Fund") to the Secretary, Mr. EDWARD DAVIES, THE LANCET Offices, Strand, London, W.C.

The application should be accompanied by two separate testimonials, one from the Clergyman of the Parish or other resident Minister of religion, and one from a registered Medical Practitioner, stating—that the application addressed to the Almoners has been read, how long they have known the applicant, and that they believe the statement to be perfectly truthful, and such as may be acted upon without further inquiry.

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APPLICATION FORM.

To the Almoners of the Lancet Relief Fund.

The applicant should here state shortly:—

1. The nature of the emergency that has arisen.

2. The circumstances out of which it has arisen.

3. The amount of the grant desired, and whether by way of loan (free of interest) or of gift.

4. If by way of loan, state when the loan will be repaid; and from what source the funds to repay it are expected to be forthcoming.

[*Continued on page 486 C.*

5. Whether the applicant is entitled or able in the circumstances which have arisen to look to any other source of assistance; and if so, what is the expected nature and extent of such assistance.

6. Whether the applicant is receiving, or has received during the past six months, pecuniary aid from any Medical Charity.

7. State how the applicant is qualified to receive assistance; vide regulation* on first page.

8. Particulars of:

Applicant's age

Number in family

How many are self-supporting

How many are partially dependent

How many wholly dependent

Applicant's Signature

Address

Date

Continued from page 486 B.]

*No.*_____

THE LANCET RELIEF FUND.

Name _____

Address _____

_____

Received _____

Considered _____

Result _____

Date _____

THE LANCET.

LONDON: SATURDAY, FEBRUARY 16, 1901.

The New Parliament and Domestic Legislation.

THE opening of any Parliament is always a matter of interest, but the ceremony of last Thursday was an event of exceptional importance to the nation. Parliament was opened by a new Sovereign accompanied by his Queen Consort with every circumstance of pomp and precedent that could give the ceremony weight, and in national circumstances which have commanded the attention of the world. Some of these circumstances have excited hostile criticism, as if England were now what Admiral COLLINGWOOD said she was a hundred years ago, "a target for all nations to shoot at"; but on the whole our relations with foreign States have been notably smooth since the death of the QUEEN moved all civilised nations to mourn her with us. The change of Sovereigns has evoked expressions of sympathy and respect which show that despite the different views of different races there is a substratum of reverence for what is good in all. We recognise the underlying humanity that has had its manifestation in the unprecedented recognition by all men of the virtues of QUEEN VICTORIA and in the generous sentiments which have been expressed towards her son who succeeds to her throne. The occasion is one of the greatest impressiveness, being the beginning of a new Parliament in a new century under a new ruler. The KING, the QUEEN, the Ministry, the Houses of Parliament, must feel that it is especially incumbent upon them to give the nation a new start in all that makes for the welfare of the people and for the peace of the world. His Majesty KING EDWARD VII. has given clear intimation that he realises the situation to which he is called and the duties of it. The British nation, subjects of QUEEN VICTORIA for 63 years, have conceptions of government and of Royalty such as no nation in the world have probably had before, and they look with confidence to the KING to rule them as they have been ruled, discipline being used to maintain and not to curtail freedom. Happy is the monarch who succeeds under such auspices.

KING EDWARD VII. steps on to the British throne at a time when there is a marked competition among the great nations for supremacy. The victory may or may not be ultimately settled by recourse to arms—God grant no such ordeal will be required at this period in the world's history; but military success and territorial aggrandisement are not the objects of national rivalry. What the peoples of the world seek are markets for trade. And the stress of competition in commerce between ourselves and powerful nations will not be without its advantages if it throws our statesmen back on the scientific use of the materials at hand. Long decades of wealth and luxury and prosperity have made us careless of efficiency. The new KING begins his reign with the discovery, nay, with the demonstration, that such conditions of life may be accompanied with much that is unhealthy, ignorant, and altogether unsatisfactory. The homes of many English people are hotbeds of disease and death. The education which is supplied to all gratuitously is inadequate for making life bright or for fitting the people for doing the best in their various callings. Dr. OLIVER LODGE, Principal of the University of Birmingham, said well to the members of the National Union of Elementary Teachers, in his address on "Educational Problems," delivered last week: "What scope for advance there is! Walking the streets how seldom one saw an educated face. How dull, uninterested, uncultured, and uninteresting the mass of mortals were." These are painful words, but as true as they are painful; and Parliament will be expected at the turning of a new page in history to endeavour strenuously to make of the wealthiest nation in the world the healthiest and the happiest. They may rest assured that in the KING they will have a well-informed and hearty coadjutor. It is to work with this object that Parliament is called as well as to the ending of the South African war in a victory of peace such as shall atone for its many horrors and failures. Lord SALISBURY and many lesser statesmen remind us in a somewhat vague formula that the great domestic problem before us is the provision of better houses for the working-classes. The Premier, in other words, perceives that the men who have to fight our battles must be healthy men with homes worth fighting for. The Colonial Secretary will heartily endorse this view, for is it not the fact that we owe to him one of the wisest Acts in our statute-book, though, alas, as yet little appreciated, by which for a sum not more than his rent the working-man may be helped by his municipality to buy in a reasonable time the house in which he lives. We could wish, indeed, that Mr. CHAMBERLAIN'S mind were liberated from its present cares to give help in the solution of those problems of sanitary, social, economic, and educational progress on which our ability to hold our high place among the nations clearly depends. But other members of Lord SALISBURY'S administration will be expected to see that legislation is undertaken to reduce the disease, the drunkenness, the ignorance, the incapacity of the nation. A Ministry that will not attempt such tasks cannot long retain the respect of the constituencies. Epidemics of disease over which science has given us complete control—control which has been tampered with by what is virtually the present Ministry—still threaten us; drunkenness still wastes the substance of the people and leads to the starvation of children and the wretchedness of homes; large numbers of people die without medical care or attendance; wealth monopolises space and land so that poverty in this vast metropolis can scarcely find a room in which decently to live. These are the evils in the remedies for which we are most immediately interested, and they are the evils which the British people, when their eyes are turned from South Africa to the motherland, will certainly insist upon having removed.

The South African war is an illustration of the way in

which an imperial question becomes a domestic one. In the memory of living persons the nation has not been moved to its heart more than by the various vicissitudes of this war. The bravery and brilliance of our soldiers have been largely neutralised and the reward of their militant virtues has been long delayed by defects of foresight, of organisation, of education—general, military, and scientific—which it must be the primary object and duty of statesmanship, rising above all party considerations, to supply. The British Empire is in need of statesmen of whom it can be said, as it was said of BURKE, "He saw everything and he foresaw everything." It is easy to be wise after the event. But we have a right to expect in our statesmen a more scientific forecast of things generally and a more intelligent study of the forces, social and political, which are moulding the nations, including our own, and which are bound to affect their action and their history.

Inoculation against Enteric Fever.

THE general results of a statistical comparison between the inoculated and uninoculated British soldiers serving in India, so far as an experimental trial has been made of Professor WRIGHT'S method of inoculating against enteric fever in that country, are stated to have been distinctly in favour of the inoculated. The results are, at any rate, sufficiently favourable to indicate that a further and more extended trial of this system of treatment should be made. An interesting communication from Professor WRIGHT published in THE LANCET of Feb. 9th, p. 399, furnished the results of an officially compiled statistical statement dealing with the effects of anti-typhoid inoculations in the case of one corps—the 15th Hussars. From this statement it appears that the incidence of enteric fever in the inoculated is represented as 0·55 per cent. and the mortality 0·27 per cent., while the incidence in the uninoculated is 6·14 per cent. and the death-rate 3·35 per cent. Although these figures are drawn from a comparatively limited number it will be seen that so far as they go they are very favourable to inoculation.

Inoculation against enteric fever has also been largely resorted to among the troops serving in the South African war, and the publication of the returns showing the results is anxiously awaited and should soon, we imagine, be forthcoming. The two sets of observations—those from India and those from South Africa—should furnish reliable data for estimating the influence of inoculation in lessening the soldier's liability to contract, or to die from, this form of fever, and it is quite possible that the returns from South Africa may turn out to be the more valuable of the two. According to official reports extending over many years it seems to be, statistically speaking, a well-established fact that the susceptibility of British troops under a short service system to contract enteric fever in India is most marked during their first and second years of service in that country, and notably during the first year. In the report of the Sanitary Commissioner with the Government of India for 1898, for example, we find that the ratio of mortality from enteric fever per 1000 of strength was greatest in the age-period 20–25. As regards residence in India, the ratio of mortality from enteric fever per 1000 of strength was highest in the first year of residence. The total number of deaths from enteric fever in the first year of Indian service was 236, and 70 out of every 100 deaths from all causes were from enteric fever. Out of the total number who died at all periods of residence from enteric fever 41 per cent. were in their first year of Indian service. These general results are, moreover, only confirmatory of those which have long been set forth in the official reports of former years. It may be pointed out, therefore, that any preponderance of soldiers in their first year's service on one side or the other—inoculated or uninoculated—might prove very misleading. The figures showing the results of inoculation might not be fairly representative of the advantages it confers where the subjects of inoculation were mainly composed of the class most susceptible of being attacked by enteric fever; on the other hand, the figures might unduly exaggerate the advantage where the least susceptible happened to form the majority of the inoculated class. It is highly probable, of course, that the troops serving in India have not been in any way specially selected, but have been taken, indiscriminately and as a mere matter of convenience, as they voluntarily offered themselves for inoculation; in which case there would be no such disparity between the inoculated and uninoculated as would practically affect the results of a comparison being made between them. The returns obtained from the troops serving in South Africa will not be open to any fallacy of this sort. The aggregate number of troops is very large; they are, or were, nearly all of about the same length of service in that country—that is, in their first year—and have all been subjected to the same or very similar conditions. The troops that came from India may, it is true, have already paid their tribute and have acquired immunity owing to their having been previously attacked with enteric fever whilst resident in that country, but the Indian contingents form no preponderating part of the army in South Africa. When all the figures bearing on inoculation against enteric fever and derived from observations made upon our army in South Africa are forthcoming we ought to have a good guide to th value of the treatment.

Supposing the protective influence of inoculation against enteric fever to be established as the result of these investigations, there still remain several points that will have to be determined before it can be generally applied as a practical measure—for example the degree of immunity which it confers and for what length of time it confers it. It need scarcely be said that the subject is not merely one of scientific or medical interest. It is devoutly to be wished that the evidence of figures and experiments, with which we have yet to be furnished, may prove sufficient to put the value of inoculation against enteric fever on a secure basis as a scientific and successful method of therapeutics. If this should turn out to be the case Professor WRIGHT will have conferred an inestimable boon not on the British army only but on humanity in general.

A Constant Water Service for London.

WE print in another column an account of the progress which has been made as to the provision of a constant water service for the inhabitants of London. The progress, it will be seen, has been slow, but it has been continuous. The advantages of a constant service were strongly insisted upon by Sir JOHN SIMON over 50 years ago, and statutory obligations of increasing stringency have been placed upon the metropolitan water companies as a result of the legislation of the years 1852, 1871, and 1897. At the present time every resident in London has a right to insist on receiving a constant supply of water from the company in whose area of distribution he lives, and should the company fail to carry out their duty in this respect they render themselves liable to pay a fine.

During the past few years some of the companies have failed to give a constant supply. These failures have been due to three chief causes:—

1. A company has had an inadequate amount of water at its disposal. More than one distressing famine has been suffered in the area of the East London Company from this cause. At length, happily, arrangements have been made by which the other companies can, when necessary, supply the deficiency by passing filtered water into the mains of the defaulting company. The Act passed to legalise this proceeding was the direct outcome of the first report of the Llandaff Commission.

2. A company has failed to give an adequate supply of water because it was deficient in regard to its means of purifying the river water. The Thames water is purified by means of sedimentation in reservoirs and afterwards by filtration.[1] The more completely the process of sedimentation is carried out the less the work the filters have to do and the longer they remain efficient. The early summer is the time at which the process of filtration causes most anxiety to the engineers of such companies as have an insufficient number of filter-beds. The surface of the sand is then liable to become blocked with a substance which is popularly called fish spawn. It will be remembered, at any rate by those who lived in the district, that some years ago a water famine in the area of the Lambeth Company was stated in Parliament to be due to the abnormal amount of fish spawn present in the river water which "choked" the filters. The fact unfortunately is that the reservoir capacity and the filtration area of the Lambeth Company are deficient, and so long as this is the case their customers will be liable to be the victims of such an accident.

3. Companies have failed to give a constant service because the water has during a severe winter frozen in the mains. This has occurred because the pipes have been placed too near the surface of the ground. Since the frost of 1894 many of the mains of the London companies have been relaid at a greater depth, but we are by no means convinced that they are all laid as they should be—that is to say, so deeply as to ensure that the water is in no danger of freezing.

It is essential for the well-being of the people of London that they should have a constant water service. When the companies have failed to give a constant supply it has been due to some fault or negligence on their part. They should not be allowed to profit by the faults which they have committed in the past, and the people of London should make them understand that future negligence, should it occur, will be punished in the manner provided for by the statutes. Where there is a constant water service domestic cisterns are not necessary if the mains are so laid as to obviate the effects of frost. It is always preferable to draw the water directly from the pipes. The metropolitan water companies are now trying to obtain the sanction of the Local Government Board to introduce some new regulations in regard to domestic fittings. They wish amongst other things to re-introduce cisterns into dwelling-houses. If the proposed regulations are adopted they will cause great expense and great inconvenience to the people of London. The water companies have skilfully chosen their time to carry out what, for them, would be a veritable *coup*. This is easily seen from the following facts:—

1. The President of the Local Government Board has only recently been appointed and cannot possibly have yet grasped all the difficulties of the question.
2. The Water Examiner to the Local Government Board has held office for a brief period only.
3. The London County Council have been unfortunate in their policy in regard to the water question generally, hence their opinion on this matter will probably receive less consideration than it should.
4. The new metropolitan borough representatives have not yet had time to study the question in detail.

We are strongly of opinion that the proposed new regulations should not be sanctioned by the President of the Local Government Board. The interests of the London water consumers have been unduly neglected. They are a long-suffering people, but should the President of the Local Government Board consent to the compulsory re-introduction of the domestic cistern we are moved to prophesy that the Government will alienate some of their best supporters.

[1] Except in the case of the East London Company which has no subsidence reservoirs at its Thames station.

Annotations.

"Ne quid nimis."

THE LANCET RELIEF FUND.

THE report of the Almoners of this Fund for the year 1900 is the twelfth in number, the Fund having come into operation upon Feb. 1st, 1889. The year 1900 showed, as might have been expected from the increase in the cost of living caused by the war, an increase in the number of applications and of grants. In 1899 the number of applications was 33 and the grants allotted numbered 24. In 1900 the applications numbered 42 and the grants allotted numbered 34. In 1899 there was only one grant which took the shape of a loan, all the others being definite gifts, while during the past year there were four loans and 30 gifts. The sums allotted varied from £5 to £20. It will be noticed that although the number of loans is still much less than that of the gifts, yet the loans for the year 1900 are more in number than the loans for 1899. We are rather glad to see the increase in the number of loans, for of the various cases which are presented for consideration there is none in which it is possible to extend a helping hand with a livelier sense of satisfaction than the case in which a timely loan helps a brother overtaken by adversity to help himself. But the form which the grant takes is no great matter. The chief thing to be considered is the advantage of the beneficiary,

and we as the benefactors can only hope that the grants from the Fund take that shape which is the most serviceable for those in whose interest they are bestowed. It is again our privilege to make public acknowledgment of the generous services rendered to this charity by the distinguished men who have associated themselves with it in the capacities of almoners and of auditor. We refer, of course, to Sir William Selby Church, Bart., the President of the Royal College of Physicians of London; Sir William Mac Cormac, President of the Royal College of Surgeons of England; Sir William Turner, the President of the General Medical Council; and Sir Henry Pitman, for many years the Registrar of the Royal College of Physicians of London. In presenting to each and all of them our thanks we assume to speak not only for ourselves as donors of the Fund, to whom its due administration is naturally a matter of solicitude, but in the name also of those who benefit by it and whose gratitude, not always articulate, is in not a few cases evidenced by expressions which it is a privilege to acknowledge but a satisfaction largely alloyed with sympathetic sorrow to receive. The application form of THE LANCET Relief Fund will be found in our present issue and can be readily detached for use in case of need. We again take an opportunity of asking those of our readers who may have occasion to assist in furthering any application made for relief from this source to note carefully the conditions on which applicants become entitled to participate in the benefits of the Fund, as it is still found that many requests are put forward which are so far outside the objects of the benefaction that they cannot be entertained and from such applications nothing but disappointment can result. All applications should be made on the prescribed form, and be sent to the Secretary of the Fund, Mr. Edward Davies, THE LANCET Offices, 423, Strand, London.

MEDICAL CERTIFICATES AND THE LONDON SCHOOL BOARD.

AGAIN the old story of the relation of the London School Board to medical certificates has come to the front. On Jan. 30th a father was summoned by the board for not sending his child to school. There was no doubt as to the child's illness but the father did not hand in a medical certificate and therefore the magistrate disallowed the costs. This seems hard, but of course the father should either have procured a certificate or induced his medical attendant to give evidence. The question of payment, however, comes in. No medical man should be required to give a certificate without payment, but in many cases the parents are too poor to pay for one. Mr. Nelson Hardy, writing to the *Standard* of Feb. 5th, tells the following story illustrative of this point. He was in attendance upon one of the School Board teachers, and received a letter from a clerk who wrote to him stating that the medical officer of the board had asked him to write to Mr. Hardy to know if Mr. Hardy would be kind enough to let the medical officer have details of the teacher's illness. Mr. Hardy thereupon wrote to the clerk asking whether the board would pay a fee for professional information. Next came a letter from the medical officer himself, "telling me," says Mr. Hardy, "that it was the duty of a teacher to supply the board with full and complete information of any ailment from which he is suffering, and that he thought it only right, in the teacher's interest, that I, as his medical attendant, should have the opportunity of giving the opinion he (the medical officer) had asked for." Mr. Hardy's letter continues as follows: "Of course, I sent no opinion, but wrote instead asking the medical officer if he considered it ethically correct to ask a professional opinion from one of his medical brethren for which he knew that his board had no intention of paying, and also was he not well aware that the regulations requiring the teacher to supply the board with full information as to his ailments gave the practitioner to whom the medical officer applied no legal claim upon his patient for assisting the medical officer in the discharge of his duties. I have received an acknowledgment of this letter from the clerk but no reply to my queries from the medical officer." We do not quite see why the medical officer returned no answer and are sorry that he is not in a position to say that the usual fee, for instance the sum of 2*s.* 6*d.*, that was agreed upon by the board with regard to revised certificates, should be paid.[1]

THE ILLNESS OF H.R.H. THE DUKE OF CORNWALL AND YORK.

WE are authorised to make the following statement concerning the recent illness of H.R.H. the Duke of Cornwall and York. For some days previously to Jan. 24th the children of His Royal Highness had been suffering from an ill-defined feverish malady, and on Jan. 24th he himself complained of feeling ill, although for a few days previously he had not felt himself. On Jan. 24th His Royal Highness went to Osborne and on arriving there he began to be much troubled with cough and took to his bed. His temperature then was 102° F. and his pulse-rate varied from 80 to 86. On Jan. 25th and 26th he continued in much the same condition, the cough being very troublesome. On Jan. 27th a slight friction sound was detected at the left base and the patient had a very bad night. Throughout Jan. 28th he remained very restless and uncomfortable, having no appetite, a furred tongue, and pain in the epigastric region, which last symptom was probably due to the almost continuous cough. He again passed a very restless night. On Jan. 29th a slight redness on the forehead was noticed, the cough continued to be very troublesome, and the patient passed a bad night. On Jan. 30th the temperature was still 102°, nausea was present, and he complained of a feeling of being unable to breathe; air entered badly and respiration was almost entirely abdominal. He had slight delirium, with occasional vomiting, the blush on the forehead was more marked, and one gland behind either sterno-mastoid was perceptible. On the night of Jan. 30th His Royal Highness slept for two hours with the aid of soporifics and a definite rash was beginning to appear. At 6 A.M. on Jan. 31st the rash was profuse, elevated, and very sensitive to the touch; all the glands were enlarged. From this time onwards convalescence set in and His Royal Highness rapidly improved. The illness was undoubtedly a very severe attack of German measles.

MAX VON PETTENKOFER.

THE death of Professor Pettenkofer under tragic circumstances removes from among us one of the founders of public hygiene. From the first he turned his attention to the chemical side of the study of medicine, and he had ample opportunities offered him for study at the universities of Munich, Giessen, and Würzburg. Pettenkofer's views on cholera will be found in an original article which he contributed to THE LANCET of Nov. 1st, 1884, p. 769. Though at one time he held what have since proved to be erroneous ideas of the germ theory of disease, yet he was right in maintaining that pure water and the rational disposal of sewage were the most powerful factors towards upholding the public health. So strongly was he convinced of the truth of his views that he undertook to swallow a cholera broth to demonstrate the harmlessness of the cultivations. He did it and luckily for himself without ill effect, but he must have been

[1] THE LANCET, Jan. 30th, 1897, p. 331.

too much a man of science to have attached any significance to his solitary experiment. But the story suffices to show the intense earnestness of Pettenkofer as an investigator and the sincerity of his efforts to throw light upon a terrible scourge with a view to its prevention. We now know that Pettenkofer's views on sanitation, pure air, and pure water are correct and since the time when he expressed his views we have had ample practical confirmation of them. None will dispute that with the increasing attention that has been given to these specific matters the health of the people in all parts of the world has improved or that Pettenkofer, though an obstinate sceptic in certain matters, was a great sanitarian. Pettenkofer also turned his attention to many physiological problems of the utmost importance. His famous researches which established the quantitative relations between the air inhaled and exhaled by animals have been proved to be a valuable contribution to our knowledge of the metabolic processes of the animal body. Pettenkofer in conjunction with Voit made some most important observations on the effect of muscular exertion upon the consumption of oxygen and the production of carbonic acid. A related research was also conducted by these investigators on the functions of particular nutritives in the animal body which involved laying down a theory of metabolism. In these researches Pettenkofer worked out his now classical method for the estimation of carbonic acid gas in respired air and in the atmosphere. This method, as is well known, depends upon the action of carbonic acid upon baryta water, the gas being absorbed with the formation of barium carbonate. Doubtless his experiments on the processes of nutrition led him to seek a means of detecting bile in urine. The Pettenkofer test for biliary acids which he subsequently discovered depended upon the formation of a train of colours when urine containing bile was treated with common syrup and sulphuric acid. The most marked colour produced was a beautiful purple. The test has since been modified in various ways, the most important improvement being the use of glucose instead of cane sugar. Glucose does not char when dissolved in strong sulphuric acid, whereas cane sugar does, and this occurrence is apt to mask any colour that may be produced. The various schools of hygiene throughout Germany contain professors of public health who were formerly pupils of Professor Pettenkofer. The veteran *savant* died at the age of 83 years and such a great length of life was consistent with his precepts.

THE CRUELTY OF COMPULSORY RETIREMENT.

A CORRESPONDENT is moved by "the lamented death of our beloved Queen, and upon contemplation of the many glorious and magnificent achievements of Her Majesty's later years," to write to us upon the subject of the injustice and cruelty of compulsory retirement. There is liberty in most things, he says, but in the matter of labour liberty is in some quarters positively denied. Our correspondent further points out that the moment a man suddenly ceases from his wonted labour he begins to deteriorate, and instances a number of men and women who have done good work in old age. There is no doubt that a hard-and-fast rule of retirement acts in many cases both unjustly and injuriously—unjustly because age has nothing to do with a man's capacity for work, and injuriously because in some cases the retirement comes when the ripe experience of the worker is at its best. The old proverb, "A woman is as old as she looks and a man is as old as he feels," is a very true one, and it is ridiculous to say that no one is fit for work after 60. Some men are old at 40 while others are fresh and juvenile at 80, and the personal equation must never be overlooked. Compulsory retirement, so far as we know, only exists in Government offices and hospitals. In trades there is nominally no compulsory retirement, but if an artisan is out of work at the age of 60 he will find hardly any employer who will give him more work although the same employer would probably have no hesitation in keeping on a man who had grown up to the age of 60 in his employment. In this way retirement is to a certain extent compulsory, for if a man cannot get work he is compelled to cease from it. But in the liberal professions we think that compulsory retirement does in many cases result in harm. Supposing that the 65-year rule had obtained in the Church we should long ago have been deprived of the services of the present Metropolitan, a loss which would have been very great. It would be undoubtedly difficult to decide without giving offence as to when a man became unfit, but that some modification should be made in the present inelastic system of compulsory retirement is, we think, certain.

SUTURE OF WOUNDS OF THE HEART.

THE *Medical Record* of New York recently contained an important paper on this subject by Dr. L. L. Hill. A wound of the heart may be produced by a stab or by a blow upon the chest, especially after a full meal, when the distended stomach pushes the heart upwards and forwards and causes a larger area of the organ to come in contact with the thoracic wall. When hæmorrhage into the pericardium is not arrested a fatal result is inevitable, for when the limit of pericardial distensibility is reached the heart is unable to dilate and the cardiac movements are mechanically stopped. Dr. Hill therefore insists that it is the duty of the surgeon to operate in every case of wound of the heart. It is as important to do so as to relieve a strangulated hernia. In 45 collected cases in which injuries caused rupture of the heart without opening the pericardium a fatal result always ensued. Only one patient survived as long as 14 hours. Of patients operated on for heart wounds 41 per cent. have recovered, as against 10 per cent. of those on whom no operation was performed. Operators agree that for closing a wound in the myocardium interrupted sutures are preferable to continuous sutures. They should be close together and not involve the endocardium. Silk is the best material. The needle should be similar to that used for intestinal suture. The suture should be passed and tied during diastole. The first suture may be used to steady the heart and to facilitate the passage of others. Ollier was opposed to the use of a general anæsthetic, but if the pulse was strong and the general condition was good chloroform might be given. Parrozzani operated in two cases without anæsthesia and observed only slight movement when he cut the skin and when he passed sutures into the myocardium. Dr. Hill narrates the two following cases. A girl, aged eight years, carried in her waist a needle two and a half inches long which was driven into her heart in falling against a tree. She was brought to his house with anxious countenance, rapid and weak pulse, and laboured respiration. The needle had entered the left fifth intercostal space and the head could be seen moving under the skin with the cardiac pulsations. 10 drops of a 4 per cent. solution of cocaine were injected under the skin and an incision an inch in length was made down on the needle, which was extracted with dressing forceps. The wound was immediately closed. Recovery followed. In the second case a man, aged 28 years, received a stab in the left fourth intercostal space a little inside the nipple. The limbs became relaxed and the pulse was hardly perceptible. The sounds of the heart were indistinct and the area of cardiac dulness was increased. Evidently the pericardium was filling with blood and the heart's action would soon be stopped. External hæmorrhage was slight. The blood was let out by enlarging the opening in

the pericardium and the patient's condition at once improved. He recovered though pericarditis followed. To expose the heart for the suture of wounds Dr. Rotter, writing in the *Münchener Medicinische Wochenschrift* of Jan. 16th, 1900, p. 79, has recommended, as the result of experiments on the cadaver, that an incision commencing three-fifths of an inch from the left edge of the sternum be made outwards along the lower border of the third rib for a distance of four inches and a similar incision along the lower border of the fifth rib for about three and one-fifth inches. The external ends of these incisions are connected by a third one. The incisions include the whole thickness of the thoracic wall and open the left pleural cavity. The fourth and fifth ribs are divided and luxated from their sternal attachments and the whole flap, including the soft parts and the ribs, is turned inwards, like a door on its hinges. The only arteries which have to be ligatured are the intercostals. The lung projects into the wound and is pushed outwards and held aside while the pericardium is opened by an incision extending from the upper and inner to the lower and outer angle of the opening in the thorax. The heart is so completely exposed that even the posterior surface can be reached. If still more space is required the third rib may be included in the flap.

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

WITH regard to this Fund we learn that the honorary secretaries are authorised to state that there is no intention of making any alteration whatever in the title of the Fund. Its full title is, it should be remembered, "The Prince of Wales's Hospital Fund for London to Commemorate the Sixtieth Year of the Queen's Reign." We are glad to have the opportunity of giving publicity to the above statement and are equally pleased to see the decision which has been arrived at. First of all, there is the sentimental reason. As the Preacher remarked, in a slightly different sense, "A good name is better than ointment," and names, without doubt, have a great influence. The title of the Fund could not be altered with any regard to the new position of its Royal founder without doing away with the memorial idea. Secondly, there is the practical side to be considered. The Fund has been known under its old name ever since its inception; subscribers have got accustomed to the title, large legacies and bequests may have been left to the Fund which if the name of the Fund were altered would have to be re-bequeathed and, therefore, probably legal worries and expenses would have to be entered upon. For all these reasons we are glad to know that the old title will be kept, a title which will ever recall the sympathy of the Heir Apparent with the wants of the poor and needy, as well as the memory of the gentle, kindly monarch so lately entered on her rest to whom sorrow and suffering never appealed in vain.

A METHOD OF DISTINGUISHING THE BLOOD OF DIFFERENT ANIMALS.

IN the *Deutsche Medicinische Wochenschrift* of Feb. 7th Stabsarzt Dr. Uhlenhuth describes some experiments which he has made with human blood and also with that of a number of the lower animals, the result being that he believes that he has discovered a specific reaction for human blood and also for that of the common fowl, the horse, and the ox. The process of testing for ox-blood is described by him at length as follows. At intervals of from six to eight days about 10 cubic centimetres of defibrinated ox-blood were injected into the peritoneal cavity of a rabbit and after about five such injections the blood serum of the animal was fit for use. In the next place samples of the blood of a number of different animals were diluted with about 100 times as much ordinary water, making pale red solutions of about an equal depth of colour. The insoluble stroma was removed either by subsidence or filtration. Of each of the clear solutions thus obtained about two cubic centimetres were put into test-tubes of about a quarter of an inch in diameter, and then mixed with an equal quantity of a solution containing 1·6 per cent. common salt—i.e., twice the strength of physiological salt solution. It is essential to use this particular salt solution, for the normal serum of the rabbit mixed with plain water gives rise to a turbidity which might interfere with the recognition of the specific turbidity. With physiological salt solution the addition of rabbit's serum never causes turbidity. Dr. Uhlenhuth employed in his experiments both human blood and also that of the ox, horse, ass, pig, sheep, dog, cat, stag, fallow-deer, hare, guinea-pig, rat, mouse, rabbit, common fowl, goose, turkey-cock, and pigeon. To each of the test-tubes there was now added from a tube drawn to a fine point six or eight drops of the serum of the rabbit which had been injected with the blood of the ox, whereupon there was seen in the solution of ox-blood a distinct turbidity which was very evident by transmitted sunlight. The contents of all the other tubes remained perfectly clear. In course of time the turbidity increased and ultimately a copious flocculent deposit fell to the bottom. Normal rabbit's serum causes no turbidity in solutions of ox-blood. By the addition of a few drops of serum from the injected rabbit it was therefore possible to recognise ox-blood. In a precisely similar manner injections of human blood were given to rabbits, and serum from the animals was added to the 19 specimens of blood above mentioned, the result being that the solution of human blood, and that alone, became turbid and threw down a deposit. All the other solutions remained perfectly clear. Normal rabbit's serum causes no turbidity in solutions of human blood. This reaction, therefore, enabled human blood to be distinguished with certainty from the other kinds of blood above mentioned. The reaction was extremely delicate, only traces of blood being required for the determination of the species of animal to which it belonged. By it Dr. Uhlenhuth succeeded in recognising samples of human blood, ox-blood, and horse-blood which had been allowed to dry on a board and after four weeks were dissolved in physiological salt solution for the purpose of examination. His experiments were made in the Hygienic Institute of the University of Greifswald. If his conclusions are verified the reaction will obviously be of great use in medico-legal inquiries.

THE WHITE CROSS LEAGUE AND QUACKERY.

WE have received from the White Cross League two excellent pamphlets, entitled, "Quacks and their Advertisements," published at the offices of the League, 7, Dean's-yard, with a view of protecting young persons and others from the machinations of a dangerous class of impostors. The particular quacks aimed at are those who trade upon the ignorance and fears of youth, who begin by alluring their victims by advertisements of cures for supposed sexual weakness or sexual disorders, and "remedies" for conception, and who end by extorting large sums of money either by selling sham, and possibly dangerous, medicines, or by the simpler and more lucrative process of blackmail. The pamphlets in question are not intended for the perusal of those liable to fall into the hands of the sexual quack, but are rather for the instruction and guidance of parents, clergymen, and others from whom the word of warning should most effectively come, but who are often silent simply because their observation has not been aroused, while their knowledge of the dangers to be feared and of the means of guarding against them is insufficient. We

commend them to the study of medical practitioners who cannot be too well informed as to the methods adopted by the quack in order that they may be prepared to counteract his influence. Probably not every medical practitioner, for example, is aware of the "dodge" of sending to the applicant who answers an advertisement medicine calculated to produce precisely those symptoms most likely to alarm him, while a second instalment of less injurious character follows, with the result that the symptoms caused by the first doses abate and the quack claims (and the patient believes) that the treatment has been beneficial. In the second pamphlet we note a useful discussion of the manner in which dangerous advertisements may, to some extent, be put a stop to. These, when they appear in the public press, cannot be dealt with under the Indecent Advertisement Act which refers to notices affixed in public places or in urinals, and does not profess to purify newspapers. It is suggested, however, that in the case of a newspaper a letter to the proprietor may satisfy him that an advertisement, even though outwardly harmless, is giving offence to a section of his readers. We believe that some good may be done in this way, particularly if the persons remonstrating are of known position and influence; but, on the other hand, we cannot forget that advertisements which were patently and obviously offers of drugs to be used for the purpose of procuring miscarriage were accepted by hundreds of newspapers in all parts of the country. Until recent prosecutions of the advertisers and plainly spoken warnings uttered from the judicial bench caused the proprietors of certain newspapers to realise that their conduct was not only scandalous but actually dangerous to themselves the abuse was not abated.

"A FINE FOR DYING."

AT the present day, when so many people spend a portion of the year abroad, and particularly when invalids of various kinds seek the hotels of foreign resorts in consequence of medical advice, the circumstances related in our last issue (p. 444) under the above heading have a wide interest. Briefly stated, the matter is this: a gentleman, advised by his medical man, goes to Caux and stays in a hotel there. He dies and his relatives are charged £40 compensation by the hotel. The relatives on their return inform the medical man, who sends us their letter for publication as a warning to other practitioners. In sympathising with people who besides the loss of a relative are promptly mulcted of a considerable sum we must not entirely overlook the other side of the question. To a hotel a death may be a matter involving serious loss of reputation and of business. In the particular instance which concerns us we have no details of the nature of the patient's illness and the manner of his death. Presumably there was nothing unusual in either nor anything particularly likely to be damaging to the hotel should it become matter of common knowledge. Such being the case we think the charge made was certainly excessive. Moreover, it seems to us a most unreasonable procedure to make a fixed charge of £40 in every case where death occurs at the hotel. It is easy to imagine cases in which this charge would be much under the cost incurred by the hotel, just as in the present instance it was probably very much above it. In cases of infection, for instance, the necessary cleansing, possibly the closing of part or all the hotel, might well lead to loss of business far exceeding £40. On the other hand, in a case of what we may call ordinary death the loss to a well-managed hotel should be little beyond a few incidental expenses and should certainly be covered by far less a sum than that which was here charged. A moral, at any rate, may be drawn from this case. When a patient is going abroad obviously it may save his friends annoyance if their medical adviser should mention this matter to them and be able to give them some idea of what is likely to arise in the untoward event of death overtaking their sick relative.

THE COMMUNICABILITY OF GLANDERS.

THE President of the Board of Agriculture has appointed a committee to conduct experimental investigations into the communicability of glanders. The influence of mallein when repeatedly administered in arresting or curing the disease is also to be made the subject of inquiry. The committee will consist of Mr. A. C. Cope, M.R.C.V.S. chief veterinary officer of the Board of Agriculture (chairman); Professor J. McFadyean, M.B., C.M., B.Sc. Edin., M.R.C.V.S., principal of the Royal Veterinary College, Camden Town, London, N.W.; Mr. William Hunting, F.R.C.V.S., one of the veterinary inspectors of the London County Council; and Mr. J. McIntosh McCall, M.B., C.M. Glasg., M.R.C.V.S., assistant veterinary officer of the Board of Agriculture. Mr. A. H. Berry, M.R.C.V.S., of the Board of Agriculture, will act as the secretary to the committee.

MR. BURDETT-COUTTS AND THE REPORT OF THE SOUTH AFRICAN HOSPITALS COMMISSION.

As our readers cannot fail to have observed, Mr. Burdett-Coutts has lost no time in publishing long and elaborate communications in which he analyses the report of the Royal Commission on the hospitals in South Africa and subjects it from beginning to end to a very severe and trenchant criticism commenting at the same time very adversely on the conduct of the inquiry. We may safely leave Lord Justice Romer and his colleagues to take care of themselves and their report at the proper time and place. The whole question must engage the attention of Parliament and we make no doubt that some reply will be forthcoming to Mr. Burdett-Coutts's strictures. We hope to see the matter fully and fairly discussed, for it is one, if ever there was one, which demands to be very earnestly and dispassionately considered. We were not among those who denied *in toto* the existence of the state of things described by Mr. Burdett-Coutts. But we wanted to know, like everybody else, how far this state was unavoidable under the circumstances, or whether it was attributable to the negligence, incapacity, or fault of anyone. The mere fact of Lord Justice Romer having been appointed to preside over the Commission gave us the assurance that the inquiry would be thoroughly and dispassionately conducted. The report, which, be it remarked, was signed by all the Commissioners, struck us as an able and eminently fair public document. Mr. Burdett-Coutts thinks otherwise. He will have none of it, and enters a strong protest against it. We must be content to await further developments. We may, however, say this in the meantime in regard to the war in South Africa, because it must be patent to everybody now. Every day brings the fact to light more forcibly that neither this country nor the Government, nor, indeed, anybody, had formed any correct estimate of the very formidable nature of the undertaking. The war preparations were designed on altogether too small a scale. Medical provision was made for an army of some 50,000, whereas it should have been, as it turned out, for nearer 250,000. The transport in the country at the time of Lord Roberts's arrival was better adapted for peace manœuvres than for a large war, whose operations had to be conducted over an enormous extent of territory. But for these facts it seems to us that Mr. Burdett-Coutts would have found no ground for his bitter criticism. In order to obtain a correct view of

this war the military despatches, as well as the report of the Commission on the medical service and Mr. Burdett-Coutts's comments, require to be studied—a long and somewhat formidable task. The situation set forth in Earl Roberts's despatches was an altogether exceptional one. He had to undertake and carry out a very rapid plan of campaign and in order to do this successfully he had to incur certain risks by setting aside for a time the ordinary rules and precautions of war, and it was at this time and under these conditions that there occurred a very severe outbreak of enteric fever. The question is how far was it possible for anyone to foresee, and having foreseen it to prevent, the sad sequel.

THE ERITH DISTRICT COUNCIL AND THE MEDICAL OFFICER TO THE ERITH SANATORIUM.

MR. JOHN ELLIOT, medical officer to, and also founder of, the Erith Sanatorium, has been called on to resign his post by a majority of one at a meeting of the Erith District Council, and, according to a report of the proceedings in the *Erith Times* of Feb. 8th, it was on information verbally supplied by a subordinate nurse belonging to the establishment that this measure was decided upon. Needless to say that should such really prove to have been the case the intervention of higher authority is urgently called for and will no doubt be forthcoming. It is worthy of note that among the councillors who opposed Mr. Elliot there should be the mover of an amendment objecting to the forwarding of a vote of condolence to the Royal Family upon recent events.

AN ANOMALOUS CASE OF WORD-BLINDNESS WITHOUT APHEMIA OR AGRAPHIA.

PROFESSOR BRISSAUD of the Salpêtrière has made an interesting communication on the above subject, an account of which has appeared in the *Archives de Neurologie* for January. The case is one of word-blindness where the question arose as to whether the cerebral lesion was situated in the parietal (angular) region or in the occipital (calcarine) region and whether it was cortical or subcortical in position. The case was that of a man, aged 57 years, who was admitted to hospital for a severe attack of enteritis. His friends stated that he had lately failed to recognise ordinary objects and was inclined to oddities of conduct. The patient seemed to be well behaved on admission and after some effort and difficulty he succeeded in giving the following history. For a certain length of time prior to admission he found himself quite unable to read although he was, and still appeared to be, capable of writing. He continued in the extraordinary condition of being absolutely unable to read his name and address which he had just written with his own hand. He only saw the black lines of the writing on the white background of the paper, but they conveyed to him no significance visually. Hemiopia was also found to be present, but without hemiplegia. He continued in a febrile condition, passed into coma, and died the same day. At the necropsy the following pathological changes were discovered—viz., an old cortical softening involving the inferior four-fifths of the cuneus and the whole of the calcarine fissure as well as almost the whole of the lingual lobule on the left side; a secondary degeneration of the tapetum and of the optic radiations on the same side, but without lesion of the inferior longitudinal fasciculus or parietal cortex or any other subcortical region. The degeneration of the tapetum could be traced into the splenium of the corpus callosum and thus into the right hemisphere where it seemed to terminate in the tapetum and calcarine region of that side without affecting the optic radiations or the white substance subjacent to the calcarine cortex. The clinical and pathological interest of the case lay in the fact that owing to the intact condition of the auditory and visual word centres—the superior temporal and angular gyri—these centres could incite their respective kinæsthetic centres of word-utterance and word-writing to activity and thus both writing and speaking were possible, but the local destruction of the calcarine and adjacent cortex on the left side (primary visual cortical centre) produced not only hemiopia but also sufficient defect and disturbance in the secondary visual centre (visual word centre) of the same hemisphere to prevent the visual recognition of written or printed words.

ALE AND BEER IN THE SIXTEENTH CENTURY.

THE composition of ale and beer has always been of interest to members of the medical profession. Dr. Andrewe Boorde, who lived in the reign of Henry VIII., gives a full account of the composition of most of the beverages which were in use in his own time. He considered that water was not "holsome sole by it selfe for an Englyssheman" because it was "colde, slowe, and slacke of dygestyon." Ale, he said, for an Englishman was the natural drink. It was in his time made of malt and water fermented by yeast. It had, in his opinion, to be fresh and clear, not ropy or smoky. It appears to have been drunk very shortly after it was made, for he says that it ought not to be drunk under five days old, and that new ale was unwholesome for all men. He observed also that sour ale was good for no man, an observation which has been confirmed by subsequent experience. Contrary to the opinion of some modern brewers, he considered that barley malt made the best ale. He confessed, however, that in spite of its good qualities the beverage engendered gross humours, but he added that it made a man strong. In his description of the composition of ale no reference is made to hops and it appears that they were not used in the drink which he called ale for he looked upon other ingredients except those which he mentioned as being adulterations. The composition of beer was different. It was made of malt, hops, and water, and was, he observed, the natural drink for a Dutchman. Of late days it had indeed been used in England but unfortunately with detriment to many Englishmen, and it was especially harmful to those who suffered from colic, "for the drynke is a colde drynke," he observed. Yet he said it made a man fat—a point on which the observer could satisfy himself by examining the faces and other parts of the persons of Dutchmen. The beverage had, however, one good point, which was that if it were well served in good condition and not new it qualified the heat of the liver. Dr. Boorde was a great traveller and amongst other things he especially noticed the condition of the food and the drink in all the places which he visited. Of the ale of Cornwall he formed a very low estimate; it looked white and thick; "as if pygges had wrastled" in it, and he gives some unsavoury particulars as to the ill-effects of drinking this beverage into which, perhaps, it is hardly necessary to follow him. In Boorde's time it does not appear that Scotland was celebrated for good ale as a general rule. Although fish and flesh were to be had there in plenty, the ale, he says, was evil, with the sole exception of that brewed at Leith. Dr. Boorde was extremely severe in the punishments which he thought should be meted out to brewers of bad ale and to those who gave short measure. He gave it as his opinion that they ought to be placed in the Thames up to their chins and three inches above, and suggested that when they came out they would have to shake their ears as a spaniel that verily came out of the water. Dr. Boorde devotes one chapter of his book to soups, stews, and other articles of diet which would now be classified under the general heading of invalid food.

Amongst his recipes he recommended ale brews and caudles for weak men who could not eat solid meat. In many country districts these old-fashioned compositions are still used and sometimes perhaps with satisfactory results.

THE TRAFFIC IN OLD HORSES.

IN our issue of Dec. 3rd, 1898, p. 1492, in an annotation under the above heading, we called attention to the fact that an Order had been issued by the Board of Agriculture under which it should from Jan. 1st, 1899, be unlawful to convey from any port in the British Isles to any place outside the British Isles "any horse which, owing to age, infirmity, illness, fatigue, or any other reason, cannot be so conveyed without cruelty during the intended passage and upon landing." Offences under this Order were to be dealt with as under the Diseases of Animals Act, 1894. On Jan. 8th, two men, Ernest Ellis and Charles Wilson, were charged at the Thames Police-court with cruelty to 13 horses by leading them when unfit to travel. One horse was so weak and lame that it fell down in the road and the foot of another was partly destroyed. The horses were going to Rotterdam and had come from Stratford. Inspector Rogers said that there was no Government inspector to look after such horses. The wharf from which they were to be shipped belonged to the London and India Joint Docks Committee. They had an inspector, but he never interfered. Mr. Dickinson said that the defendants were only the agents of someone else and fined them £5 and £2 2s. costs each. We should be glad to know why such cases are not dealt with under the Order of the Board of Agriculture and the Diseases of Animals Act. If the accused, whose delinquency we have just described, had been thus proceeded against it seems that they could have been fined (apparently, under Section 51) a sum of £5 for each animal, or £65 in all. As we have said upon previous occasions, this infamous traffic ought to be stopped altogether. Not only does it give rise to gross cruelty, but it must be remembered that the flesh of these wretched animals is used for human food. Possibly it returns here in the shape of "delicacies," but even if it does not it is not fitting that we should assist in poisoning our neighbours on the other side of the North Sea.

ARSENIC IN ARTIFICIAL MANURES.

IN an annotation in THE LANCET of Dec. 22nd, 1900, p. 1828, we reported the presence of arsenic in artificial manures, and the question arises as to whether the quantity of arsenic thus present would be absorbed by plants and thus afford a possible explanation of the presence of arsenic in malt and hops. Our observations have given rise to much discussion amongst agriculturists, and especially amongst the manufacturers of superphosphate. The opinion seems to be generally held by agricultural chemists that the quantity of arsenic present in superphosphates might safely be neglected as it is so minute. In a communication sent to us by a firm of artificial manure manufacturers Dr. Stützer (the professor of agricultural chemistry at the University of Königsberg) arrives at the conclusion that the percentage of arsenic in the soil after 49 years of experiments, as at Rothamsted, would have risen to 0·0002. Of course, from these figures it would appear that we have to deal with such very minute quantities that there cannot be any question whatever of poisoning the plants through arsenic. We may point out, however, that this calculation is based upon the assumption that the quantity of arsenic in sulphuric acid is generally from 0·05 up to 0·10. Now according to the analysis of the sulphuric acid concerned in the beer-poisoning epidemic, as given in THE LANCET of Dec. 1st, 1900, page 1602, Professor Stützer will find that the amount of arsenic exceeded 1·4 per cent. In view of this fact his calculations are of no value whatever. Professor Stützer, however, points out that plants, especially in the state of germination, are just as sensitive to arsenic as men and animals and no ill effects have, as a matter of fact, followed the use of superphosphate as a fertiliser. On the contrary, the crops increase under the influence of superphosphate.

THE ALLEGED DRYNESS OF AIR IN ROOMS WARMED BY GAS FIRES.

COMPLAINT is frequently made as to the drying effect of gas fires on the air of the room, so that any information on the subject calculated to lead to this effect being avoided is welcome. According to Mr. Thomas Fletcher, F.C.S., a well-known gas-stove maker, the feeling of dryness is not due to the reduction of the moisture in the air but to some of the products of combustion escaping into the room. He regards the unpleasant feeling of dryness in the throat and nostrils as being caused by a trace of sulphur in the products of combustion escaping, a statement which would appear to be verified by the fact that a strip of wet blue litmus paper exposed to the air quickly reddens, pointing to the conclusion that the alleged fault of gas fires is caused entirely by defective flues. According to hygrometric measurements he shows that the percentage of moisture maintained in a room was much the same with a gas fire as with a coal fire. The results are much the same whether the stove has an air-warming arrangement or not, apart from the radiant heat it produces. The percentage amount of moisture was arrived at by using a wet and a dry bulb thermometer. The difference in degrees between the two thermometers was multiplied by six and the product deducted from 100, which was regarded to give approximately the percentage of moisture, taking complete saturation as 100. Mr. Fletcher states that this method is perfectly reliable for comparative observations between the effect of gas fires and coal fires at the same temperatures. It is concluded that in an inhabited room from 58 per cent. to 72 per cent. of moisture at about 62° F. will be pleasant, and this is easily obtained with either a coal fire or incandescent gas fire except when the outer air is completely saturated with moisture. Apart from the observation on the discomfort caused by sulphur compounds escaping in the products of combustion the feeling of comfort and warmth depends, as we should have supposed—although the point has not had sufficient attention paid to it in regard to the management of sick rooms and hospitals—rather on the amount of moisture in the air than on the actual temperature as shown by a thermometer.

BRAIN INJURY FOLLOWED BY WHISTLING SPELLS.

DR. WILLIAM KRAUSS has recorded in the January number of the *Journal of Nervous and Mental Disease* an interesting case of brain injury with consequent periods of whistling, which attracted much attention at the time and also possessed considerable clinical interest. The case was that of a man, aged 27 years, of Polish descent, by occupation a herdsman in the East Buffalo stockyards. He was a man of powerful build and physique, about six feet in height and weighing nearly 230 lb. Some months prior to the accident which brought on his present illness he had had a stroke of left-sided hemiplegia from which he was recovering. He slowly regained the use of the left arm and leg and was able to resume his occupation. On the morning of Dec. 30th, 1898, he was found unconscious and lying along a railway line with three scalp wounds, having probably been struck by a passing train during the night. On examination there was a depressed fracture of the skull three inches above and

one inch behind the left ear. No other important injuries were noted except a few body wounds of little importance. He was immediately trephined and the depressed bone was removed. On removing him to bed it was necessary to strap his arms as he constantly tried to remove the bandages and dressings. About 10 o'clock at night "he began to whistle, not the popular songs of the day, but the whistle-calls he was accustomed to use in calling or driving his flocks. He would continue whistling for about one minute, then would cease for five or 10 minutes, and kept this up for regular intervals till he died," four days after. The whistling was pitched always in the same key and was of the same intensity throughout and at no time was it possible to distinguish any melody. It was audible throughout the ward and attracted the attention of patients and nurses. "To the physicians in attendance it was a strange experience to hear these whistle-calls coming from a patient in a state of unconsciousness." It was impossible to rouse the patient at any time after the accident, and he died unconscious but whistling until a few minutes before death. He was treated with milk diet and stimulants in abundance but never rallied. There was complete loss of control over the bladder and rectum; the pulse was slightly lowered, but the temperature was normal. The case is a unique one, the whistling spells entitling it to publication, but no explanation is advanced to account for this peculiar phenomenon.

ARSENIC IN BEER.

ALTHOUGH the history of the beer-poisoning epidemic is now pretty well known, yet the able report of Dr. G. S. Buchanan which he has just presented to the Local Government Board must be regarded as a valuable document on the question. It is, up to the date it was issued, a complete account of the epidemic. It deals with the number of persons attacked by the epidemic, the clinical characters of the epidemic malady, and the number of fatalities, and discusses the technical processes in beer that have led to its contamination. The position, it appears to us, is so clearly defined in this report that any further inquiry, relating at any rate to the beer-poisoning epidemic, would seem unnecessary. But, as Dr. Buchanan points out, important questions have arisen concerning the safety in regard of arsenic of all chemically manufactured sugars used in this country for brewing and for all other purposes, and also concerning the precautions requisite to safeguard the public against risk from introduction of arsenic along with chemical ingredients of beer and other articles of food or drink. On this account the desirability of expert examination of the whole subject of arsenic in relation to food in its medical, chemical, and technical aspects becomes apparent, and therefore a very wide field of investigation is presented which will impose considerable labours on the Commission which the Government has decided to appoint. We have expressed the opinion that no further investigation is needed in order to decide that increased legislative measures are required to provide absolutely against the possibility of beer being contaminated with arsenic. Dr. Buchanan's report confirms our view. An abundance of material is already at hand which should easily enable the Government to determine exactly the direction in which legislation could proceed with rapid and wholesome effect. By all means let the exhaustive inquiry into the presence of arsenic in most foodstuffs proceed, but the public need not wait for the report of such a prolonged investigation for legal protection from arsenic poisoning in beer.

AT the quarterly meeting of the committee of management of the Royal Free Hospital, held on Jan. 30th, the following motions, proposed by the chairman, the Hon. Mr. Justice Bruce, and seconded by Captain H. M. Jessel, M.P., were passed unanimously—viz.:—

The committee of management of the Royal Free Hospital record their profound sorrow at the death of Her Most Gracious Majesty Queen Victoria who, as the Princess Victoria, was a vice-patron, and during the 64 years of her reign was the patron of the hospital, and in 1837 granted to it the highly esteemed privilege of being named the Royal Free Hospital, and on many occasions has shown acts of kindness and generosity to the institution.

The committee respectfully offer to His Majesty King Edward VII., to Her Majesty Queen Alexandra, and to the other members of the Royal Family most heartfelt condolence on the loss which they and the empire have sustained, and beg to assure His Majesty, who has for many years been the vice-patron of the hospital, of their loyalty and devotion to his throne and person.

A PUBLIC MEETING will be held at the Town Hall, Rosebery-avenue, E.C., on Friday, Feb. 22nd, at 8 o'clock, to consider the question of the prevention of consumption in Finsbury. The chair will be taken by the Mayor of Finsbury, who will be supported by Sir William Broadbent, Sir James Crichton Browne, Professor MacFadyean, and others. Seats will be reserved for ticket-holders up to 7.45 P.M.

LOYAL addresses of sympathy and homage have been tendered to the King by the council of the Prince of Wales's Hospital Fund for London, the council of the Metropolitan Hospital Sunday Fund, the members of the Royal Medical and Chirurgical Society, the governors of Middlesex Hospital, of the Hospital for Consumption and Diseases of the Chest, Brompton, and by many other medical institutions.

AT a meeting of the Metropolitan Hospital Sunday Fund held at the Mansion House on Feb. 7th, Sir William S. Church, P.R.C.P. Lond., was elected a member of the Distribution Committee in the place of the late Dr. Sedgwick Saunders.

A TELEGRAM from the Government of Mauritius to the Colonial Office, dated Feb. 8th, states that for the week ending Feb. 7th there were 16 fresh cases of plague, of which seven were fatal.

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

VI.[1]

SOME GENERAL PRINCIPLES.

I MUST now ask attention to certain general principles which I have expounded at some length in a work on the Causation of Disease, and I shall seek to express myself in terms as simple as possible, convinced as I am that a thorough understanding of the principles in question is necessary to a proper conception of disease and its treatment.

Life a two-sided process.—First, then, I would ask the reader to keep ever before him the fact that life consists of the mutual interaction of the individual and his environment. In the case of unicellular organisms this truth is manifest, but we must never forget that it applies to multicellular organisms also—to man, to wit. As in the case of his amœboid ancestors inhabiting the salt ocean every active living cell in man's body is bathed in a saline

[1] Nos. I., II., III., IV., and V. were published in THE LANCET of Jan. 5th (p. 51), 12th (p. 122), and 19th (p. 201), and Feb. 2nd (p. 343) and 9th (p. 420), 1901, respectively.

medium[2] containing nutrient substances and oxygen; and the essential vital changes of the body at large take place between the cells and their environing plasma. It is needful to have a clear conception of the term "environment." In the case of a multicellular organism such as man it consists of all those influences which operate from without upon the organism as a whole (the external body-environment) and upon the individual cells from within (the internal cell-environment). The former includes the solid external world and the atmospheric medium—its condition in respect of humidity and pressure, the solid particles, parasitic and others suspended in it, and the vibrating influences operating through it—thermic, actinic, luminous, electrical, sonorous, and the rest. It further embraces the macroscopic parasites, food, drink,[3] and clothing. It is also convenient to regard exercise of the muscles as pertaining to the environment, and in a measure it is justifiable, since all muscle-contraction is essentially a working against external force, which at the time of the contraction is thus influencing the body from without in a specific way.

These external physical agencies not only act upon man in his purely physical aspect: through his organs of sense they play upon his mental side also, evoking sensations, perceptions, and other psychic states. It is, moreover, by means of similar agencies that man is influenced by the minds of others, living and dead, such influences constituting a mental, as distinguished from a merely physical, environment.

The internal cell-environment embraces the various influences which operate upon the individual cells within the body (these influences being, of course, largely determined by the external environment)—the cell-environing plasma, with its oxygen, food-stuffs, salines, effete matters, micro-organisms, and the thermic, electric, and other vibratory forces, including the nerve-impulses striking upon the cell from without.

Disease a two-sided process.—Inasmuch as life consists of the mutual interaction of the individual and his environment, disease, which is a mode of life, may be defined as an abnormal or morbid interaction between these two great life-factors. I am aware that to make this definition strictly logical it would be needful to define the term "abnormal." Its meaning is, however, sufficiently clear for my purpose, which is to emphasise the two-sided character of all morbid processes; each factor—that of the individual and that of the environment—shares in those processes, and we cannot exclude the one or the other from the causation of disease.

Heredity plays a part in the causation of all diseases.—A due appreciation of this two-sided character of disease enables us to understand the important share taken by heredity in its causation, for seeing that disease consists in a morbid interaction between the individual and his environment, and that the organisation of the individual depends essentially upon heredity—i.e., he is what he is essentially by virtue of his ancestry—it follows that we cannot eliminate the influence of heredity from any disease. When an individual develops such a disease as granular kidney or megrim, independently of any specific environmental agency, it must obviously—unless it is a sport of nature, an entirely new development—be inherited from some ancestor,[4] but when it arises from the action on the individual of some specific environment, such as a pathogenic microbe, heredity is apt to be lost sight of as a factor. One must, however, remember that whether an individual shall, or shall not, respond morbidly to a specific environment depends not upon that environment only, but also upon the inherited structural peculiarities of the individual himself. Some animals, for instance, are in no way injuriously affected by micro-organisms which to others are deadly. Thus the carnivora are practically immune from tuberculosis, and this immunity obviously depends upon organisation, which in its turn depends upon heredity—i.e., these animals are immune because of the immunity of their ancestors. Woods Hutchinson has suggested that this resistance of the carnivora to the attack of the tubercle bacillus has been acquired by the survival through ages past of such among them as have not succumbed to tuberculosis derived from devouring tuberculous animals, and there can be no doubt that the different resisting powers of different species, and of different individuals among the same species, to the attack of micro-organisms, has been in large measure brought about by elimination—by the operation of natural selection.[5] Such being the case, we see how impossible it is to ignore the influence of heredity in the causation of any of the multitudinous diseases arising from micro-organisms, such as tuberculosis, ague, rheumatic fever, and malignant tumours. And the same remark applies to every disease due to the action of a specific environment. Space does not permit me to develop this thesis at length, and for farther arguments in its support I must refer the reader to my larger work already quoted. I am most anxious that this great principle should be widely understood; ignorance of it is checking advance in many directions.

Characters acquired by the individual not inherited.—The subject of the inheritability of acquired characters—diseases among others—has of late years been brought prominently before the profession by Dr. Archdall Reid, and in the controversy which he has provoked much confusion has resulted from several of the disputants failing to understand the meaning of the term "acquired character." We must, then, first be clear what we mean by it. When germ and sperm unite there is started on its career a new being. The conflict of unlike hereditary tendencies derived from these two elements may lead to the development in the offspring of entirely new characters. Such characters, or natural variations as they are called, are capable of being transmitted to future generations, and it is upon them that natural selection operates, producing in the course of generations profound racial effects; but they are not *acquired* by the new being, though they are often spoken of as if they were; they develop *de novo*. Acquired characters are those impressed upon the new being by its environment; the organism is capable of being moulded by its environment in a multitude of different ways, and it is these *environmental mouldings*, as they might be called, which constitute true acquired characters. Thus all the changes wrought in the nervous system by education are acquisitions, as also are mutilations and the hypertrophy and atrophy of organs from use and disuse, these being due to peculiar influences working through the cell-environment.

Now a careful search by the most eminent biologists throughout the world during the last 20 years has failed to discover a single unmistakeable instance of such an acquired character being inherited. All the valuable acquisitions of the brain and nervous system die with the individual; and in the same way mutilations, such as the piercing of the ears, the circumcision of the prepuce, the docking of tails, though continued through many successive generations, have no effect whatever upon the offspring. If a man develops his biceps muscles to the utmost capacity his children are not born in consequence with these muscles larger than would otherwise be the case. Similarly, the imperfect development of the jaws and teeth among the civilised is not due to any hereditary defect consequent upon their imperfect use through many successive generations; it is acquired for himself by each individual and the defect is not transmitted. Were the children of parents presenting such defects fed from early infancy on coarse food necessitating the thorough use of the jaws and teeth, we should find these structures as well developed in them as in the primitive savage.[6] To mention one other case only here—gout is essentially an acquired disease due to a specific environment, and because the individual has led a gout-producing mode of life his children are not on that account rendered more liable to develop the disease, though they may undoubtedly inherit from him the tendency to respond in the same morbid manner to the same environment if they are exposed to it.

[2] The superficial horny cells of the skin are not thus bathed, but they are practically dead and in process of being shed.

[3] Be it observed that the respiratory and alimentary tracts are, strictly speaking, external to the body.

[4] It is well known to biologists that the mingling of unlike tendencies in germ and sperm may lead in the new being to which they give rise to entirely new characters—i.e., characters not belonging to any ancestor. Such new characters constitute natural variations; and it is the opinion of Weismann that one of the purposes served by sexual reproduction is the creation of such varieties, without which evolution by natural selection would be impossible. Now it is possible that variations thus arising may occasionally be pathological, and it might be argued that they afford instances of diseases in which heredity plays no part. It is, however, probable that such pathological variations, if they do occur, are rare, and they may for all practical purposes be disregarded.

[5] I have shown how by the elimination of the susceptible a race may become adapted to pathogenic microbes, such as those which give rise to malaria (see p. 231 *et seq.* "The Causation of Disease," 1889). Dr. Archdall Reid has independently advanced the same view (see, e.g., his work, "The Present Evolution of Man").

[6] It is, however, possible that sexual selection may have had some influence in causing the jaws of the civilised to be smaller among civilised than among primitive peoples.

Normality in respect of the individual and the environment.—In seeking to discover what constitutes the normal man and his normal environment the prime fact to remember is that neither can be defined except with reference to the other. If an individual can keep healthy in a given environment (a term which, as we have seen, refers to a highly complex series of conditions) he is normal as regards it, and it is normal as regards him; if he cannot, then each is abnormal as regards the other. A negro can keep well in parts of Africa which kill the white man and the white man can keep well in parts of Europe which kill the negro. The one is normal as regards the African environment, abnormal as regards the European; the other is abnormal as regards the African environment, normal as regards the European. And similarly as regards the environment, each may be regarded as normal or abnormal according to the individual living in it.

This relativity of normality has an important therapeutic application. From it we learn that we cannot regard an individual as absolutely abnormal because he cannot keep well in an environment in which the majority can. One who under average conditions suffers from megrim, asthma, gout, or rheumatism may under other conditions enjoy perfect health, and it is the business of the physician to find out what those conditions are. Thus there are few cases of spasmodic asthma so severe that they cannot be cured by residence in some particular region, could one only discover it, and in relation to such a region the sufferer is strictly normal. In like manner victims of gout, megrim, and rheumatism may throw off these disorders under altered conditions of life, being as regards these altered conditions perfectly normal. As a further illustration of the same principle I may cite the case of a lady who, while living in a London suburb where she superintends a household under somewhat harassing conditions, suffers from bronchitis, indigestion, eczema, and general nervousness, all of which disappear, leaving her in the best of health, when she goes to stay with a married daughter in Berlin, but only to reappear on her return to the old environment. We must not, however, push this principle too far. I do not wish to imply that an individual who can only keep well under carefully chosen conditions can be regarded as coming up to a high level of physical fitness. I merely wish to insist upon the relativity of normality. Individuals differ considerably in their ability to cope successfully with different varieties of environment. The more rigorous and varied the conditions under which an individual can keep well, the higher his level of physical fitness. Some there are who can retain their health in many different climes, who can undergo with impunity the severest hardships, who can resist the onslaught of the most deadly microbes, be guilty of all kinds of excesses, eat enormously and of the coarsest foods, smoke all day, and consume large quantities of alcohol, who can undergo great physical and mental toil—and in spite of all this remain in seemingly perfect health; though I am not going to argue that they can do all these things with absolute impunity. Such men, we say, are endowed with a magnificent constitution. Others there are who can only keep well under a comparatively simple and carefully chosen environment who must select a climate with the utmost care, live on the simplest food, avoid alcohol and tobacco, and undertake only moderate mental and physical labour. These must be regarded from the biological standpoint as inferior animals. Nevertheless, they often live longer than their more robust brothers, partly because they have to take greater care of themselves and are thus protected from many agencies which make for destruction, and partly also in some cases because, though apparently frail and constantly ailing, their death-resisting power is actually greater.

And here let me observe that it is a great mistake to measure a man's physical fitness by his stature and muscular strength, as is so often done. Rather should it be measured by his power of endurance and ability to resist death, both of which are independent of great stature and muscular development. The difference between a man of powerful and another of slender muscular build is much the same as that between the cart-horse and the racehorse: it is essentially a matter of breed. As a matter of fact, tall men are generally less enduring and shorter lived than small men, and very muscular men may be in many respects delicate. Dr. Hancock, who has had thousands of coolies under his supervision, tells me that it is precisely those who have the best muscular development and are thus most valuable to their masters who are most frequently carried off by cholera—who have the least germicidal power in respect of this disease.

Now, inasmuch as normality as regards the individual can only be defined in reference to the environment, and inasmuch as it is impossible to construct a rigid standard of normality for the latter, it is obviously impossible to construct a rigid standard of normality for the individual. Nevertheless we have a sufficiently clear notion of what constitutes a normal individual. Such a one must be sound in body and limb, as popularly understood, and he must be endowed with a fair average of intelligence and moral capacity; he must, moreover, be capable of living, under an average rigorous environment, to old age in good health, subject of course to those temporary departures from it which (under the most "easy" possible environment, and *a fortiori* under the influence of those definite pathogenic agencies which the average environment entails) are inseparable from life. Our conception of structural normality, therefore, should have reference not only to any one portion of the life of the individual, but to his entire vital span. If under an average environment, Bright's disease, rheumatic fever, ovarian cyst, strangulated hernia, cancer, or such like disease develops, the individual does not answer our test of normality, and viewed from this standpoint must be regarded as abnormal. If every individual of the community came up to the normal as just defined, then under a perfect system of sanitation the only deaths would be those due to accidental causes. And here I would point out that the hygienist has fallen into the grave error of paying too exclusive attention to the environmental factor in disease.

The inadequacy of a perfect system of sanitation to sustain a high level of racial health.—Sanitation is doing much, and will do more, but it will never by itself secure a supremely healthy race. Its disciples assume that disease originates essentially in a faulty environment, and that by a proper regulation of the environment—i.e., by a perfect system of sanitation and by that alone—we can rear a healthy race. This is one of the most grievous fallacies of our time. Never was there a more fatal delusion. We cannot beguile nature with such a bribe; she will not be propitiated by having the environment carefully adapted to, and made easy for, each individual. The whole history of biological evolution is one long story of the *adaptation of the individual to the environment* by a ceaseless and rigorous elimination of the unfit; and it is in this way and this way only that a high racial efficiency can be sustained among men or any other living things. The hygienists are seeking, but they will ever seek in vain, to elude the inexorable law. Were the human species perfectly stable, showing no tendency to vary from generation to generation, their dream might be realised, but no species is, or ever can be, stereotyped. Individual members of it are constantly varying, many of them falling short of the standard of excellence. No two organisms, indeed, are born exactly alike. Taking all the children of a family, and striking their mean standard of fitness, we find that some surpass, while others fall short of this standard, and it is quite impossible to prevent racial deterioration unless those who fall far short are eliminated (as in the ordinary course of nature they would be), because by the law of heredity all natural variations tend to be inherited, and if the unfit are not eliminated their number must increase from generation to generation. I here refer to general fitness, but my proposition applies to each and every character of the individual. To take an example: "A high *racial* (I use this term as distinguished from *individual*) excellence in respect of visual accommodation can only be maintained by a stringent elimination of those displaying errors of refraction. In civilised communities such are not eliminated, and consequently the race is deteriorating in respect of eyesight. In this instance the defect is remediable and the loss is in the main an æsthetic one, but countless other instances could be mentioned in which defective elimination is lowering the efficiency of our race, and in consequence we have among us a vast multitude of the unfit. As a physician I am seeing every day of my life people whom I am compelled to class among nature's failures—people who fall short of the standard which makes life worth living, people who in virtue of their unfitness suffer more than they enjoy. When, therefore, I see, and share in, the vain struggle to patch up such failures and when I read elaborate systems on treatment, I ask myself: Why not look facts sternly in the

face and strike at the root of the evil by conforming to the supreme and inexorable law?"[7] Nothing is more certain than that it is only by a ceaseless and vigilant weeding-out of the unfit variations (which even under the most perfect system of hygiene must necessarily be born) that a high standard of racial excellence can be obtained.

Strange, indeed, it seems that this stern elemental truth has not been recognised by the pathologist. The explanation lies, I believe, in the fact that, all too intent upon his microscope and test-tubes, he has lost sight of the terrible potency of heredity. But recognising it, as we now, I will suppose, do, how, let us ask ourselves, shall we give full play to that searching process of elimination which alone can sustain a high level of racial fitness? Let me, in answer, repeat what I have already said in another place: "Nature's method of elimination is a merciless one; she unceremoniously sacrifices the individual for the benefit of the race—'so careful of the type is she, so careless of the single life.' The sole object of individual elimination, racially considered, is to prevent the unfit individual from leaving offspring to inherit his unfitness, and Nature in her rough-and-ready way achieves this object by simply wiping him out of existence. The same end can be attained, however, by the unfit abstaining from getting offspring and choosing to join the ever-increasing army of the non-marrying. Elimination from the racial standpoint means not having offspring, and all who do not leave offspring are racially eliminated—unrepresented in posterity."[8]

OUTBREAK OF TYPHUS FEVER IN MANCHESTER.

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HAVING been engaged with Dr. James Niven in dealing with cases of typhus fever which have occurred in Manchester, I beg to forward you the following brief account of the outbreak.

On Jan. 8th the medical officer of health of Manchester was informed that several of the women employed at a rag-sorting establishment had been attacked by some disease about the nature of which there was some doubt. These cases were first reported as cases of enteric fever, but they all gave a negative reaction with Widal's test. On inquiry it was found that of 14 girls and women who were employed in a particular room in this rag-sorting establishment seven, together with an office-boy who was constantly going to and fro in the room, had been attacked by the disease. These women were employed in sorting clean woollen "tailors' clippings" which are collected from various tailors' shops, chiefly in Manchester, but to some extent from other towns. This rag-sorting establishment is a small place containing two rooms which communicate with each other. All the persons attacked were employed in the smaller room where woollen rags are sorted, while not one was attacked in the larger room where only cotton rags are sorted. Both the cotton and woollen rags are quite clean and new, coming only from tailors' and clothiers' establishments and from warehouses. None of them are dirty rags such as are seen in the places of marine-store dealers. It was found that all these persons began to be ill between Dec. 20th and Dec. 24th, 1900, and when the medical officer of health was informed of the outbreak two patients had died, one was moribund, and the rest were convalescent. We were, therefore, under considerable disadvantages in making a diagnosis.

The following were the principal features of the illness in these eight patients:—The onset was sudden, the illness commencing with severe headache, pain in the back and limbs, chills, and in one or two cases, vomiting. The patients were very ill within two or three days of the onset of the disease. In four of the cases deafness came on about the ninth to the eleventh day. In three of the cases a rash described as having been of a "measly" character had been observed in the wrists, arms, chest, and face, coming on in one case on the seventh day, in another case on the fifth day, and in the third case at a period not defined. Three of the eight patients died. In the others the illness terminated by crisis—in one case on the twelfth day, in three cases on the thirteenth day, and in one case on the sixteenth day. A provisional diagnosis of typhus fever was made and subsequent events proved this to be correct.

One of the patients (Kate C——) had been lodging with Mrs. F——, and 10 days after the onset of Kate C——'s illness Mrs. F—— began to be ill and was removed to Monsall and the typical typhus eruption was observed. One of the cases removed to Monsall, but not seen by us on Jan. 5th, we found on the 20th to have presented a distinct typhus eruption. Another patient (Maggie G——) whose illness commenced on Dec. 31st, 1900, was on Jan. 2nd, 1901, admitted into a general hospital. She was removed to the Fever Hospital as soon as the outbreak was discovered and the patient could be traced, but in the meantime she had infected a nurse, on whom also the typical eruption was seen. This girl also infected her father, mother, and two younger children. The disease ran a typical course in these cases. Two children living next door were also infected by Maggie G——. Another of the girls from the workshop (Mary McL——) infected her mother and brother and two sisters. We were able to see these secondary cases at an early stage, to follow the course of the disease, and thus to place the diagnosis beyond doubt. In the course of the investigations we have learned that other girls, working under the same firm but in another warehouse, left off work on account of illness about Christmas. These girls, however, were not notified to the health office as suffering from infectious disease. Subsequently cases have occurred in each house, one of the girls having infected five persons and the other girl three persons. In the Ancoats district, where the workplace is situated and where these girls work, five other cases in one family have arisen in which no direct connexion with these rag stores has so far been traced. Up to Jan. 10th there have been 28 cases connected with this rag-sorting establishment, and five cases occurring in the neighbourhood in which the source of infection is not as yet known, giving 33 cases, the patients in eight of which have died.

On Feb. 1st, a case of typhus fever was notified in another part of the city and found to be a typical case of typhus fever. In connexion with this case a remarkable history has been obtained. It has been traced through a direct succession of cases right back to the beginning of June, 1900. One of the cases, which commenced on July 19th, was at the time diagnosed as typhus fever. Investigations made at the time failed to reveal the origin of the disease, nor did any subsequent cases come to the knowledge of the medical officer of health. There is, however, no doubt now about the diagnosis in the series of cases extending from June, 1900, to February, 1901, of which the above was one, since different observers—the medical officer of health, Dr. E. S. Reynolds, Dr. Marsden, and a medical attendant on some of the cases—had either diagnosed typhus fever or entertained a strong suspicion of it in one or other of the cases. The temperature charts taken in some instances at the workhouse hospital are also typical. In some of these cases, which occurred about July, August, and September, 1900, the patients were rag-sorters. None, however, worked at the place where the sudden outbreak occurred in December. These women were, however, acquainted, and possibly intervening cases connecting the two outbreaks will come to light. At the present moment, however, the sudden outbreak in December is not clearly accounted for. The total number of cases so far ascertained is as follows: (*a*) cases connected with the outbreak among rag-sorters in December, 1900, 33; (*b*) cases traced from June, 1900, to Feb. 1st, 1901, 18; (*c*) a probable case traced, one; (*d*) a case reported as probably typhus and removed to Monsall, one—a total of 53 cases. In addition there have been seven cases reported in which there is considerable doubt as to the diagnosis.

The following is a brief summary of the administrative measures carried out:—All persons who have been attacked have been removed to the Infectious Diseases Hospital, and the houses which they occupied and their clothing have been disinfected. An effort has been made to induce persons who have been in contact with these patients to undergo a fortnight's isolation for observation in a building specially set aside for the purpose. 24 persons are, or have been, under observation in this manner. A house-to-house inspection has been made in the

[7] Campbell: Monogamy in its Relations to Longevity and the Diseases of Late Life, THE LANCET, June 9th, 1900, p. 1654.
[8] Loc. cit.

neighbourhood of all the infected houses with a view of discovering cases of illness. Every house found in a dirty condition has been disinfected. Fortunately, none of the rags which had been sorted in the department where the outbreak occurred had been sent away. We were thus able to disinfect the whole of the rags which could have been infected by these girls and women. The workshop also was disinfected. All persons who have been in contact and who are not undergoing quarantine are being kept under observation at their homes.

A CONSTANT WATER-SUPPLY AND THE LONDON SANITARY AUTHORITIES.

OVER 50 years ago the City of London Commissioners of Sewers received from "their faithful and obedient humble servant, John Simon" (now Sir John Simon, K.C.B., D.C.L., LL.D.), a report[1] on the sanitary condition of the City, to which he was officer of health. The report dealt with questions of drainage, which that year for the first time was under municipal control, with offensive trades, with intramural burial, with unhealthy houses, with the social condition of the poor, and with water-supply. At the present time cesspools in London have ceased to exist, house drainage is universal, offensive trades are placed under strict supervision, intramural burial has been abolished except at St. Paul's Cathedral and Westminster Abbey, large blocks of insanitary houses have been removed, and the social conditions of the poor have greatly improved. Much that is said on these subjects would if stated now be looked upon as platitude—so greatly has the level of sanitary requirements been raised and universally accepted. The water-supply of the City has also been very greatly improved, yet the remarks made 50 years ago with regard to the City to some extent apply to parts of Water London which are still without a constant supply.

"I am sure that I do not exaggerate the sanitary importance of water," wrote Mr. Simon, in the first paragraph of his report on water-supply, "when I affirm that its unrestricted supply is the first essential of decency, of comfort, and of health; that no civilisation of the poorer classes can exist without it; and that any limitation to its use in the metropolis is a barrier which must maintain thousands in a state of the most unwholesome filth and degradation." No one will be found to disagree with Sir John Simon's dictum. When water is constantly supplied it can be drawn as it is required, and there is no reason why it should be stored in a house. When the supply is not constant storage becomes necessary. On the comparative merits of these two systems the report from which we have already quoted contains a decided expression of opinion. The words are as follows: "I consider the system of intermittent water-supply to be radically bad, not only because it is a system of stint in what ought to be lavishly bestowed, but also because of the necessity which it creates that large and extensive receptacles should be provided, and because of the liability to contamination incurred by water which has to be retained often during a considerable period." We are quite aware that many sanitary authorities have spoken in favour of cisterns, but this was in the belief that the water companies might break down, so that storage at home was necessary. If the water companies supply water unfailingly there can be no need for cisterns.

Lord Llandaff's Commission have lately heard evidence given in favour of the rehabilitation of the water cistern by Sir William Knight, chairman of the Southwark and Vauxhall Water Company and a gentleman who has held the position of Lord Mayor of London. The Commissioners had also brought to their notice an ingenious cistern which was constructed so that a deposit in it was practically unknown, because the bottom of it was so arranged that the water consumer drank the sediment daily, as it was made, a method which rendered any considerable deposit a matter of impossibility. Some years ago, when cisterns were universal, or at any rate common, in the East-end, it was found in one case that the receptacle was used as a bath as well as for the storage of water. The house was let out in tenements and the cistern supplying a family on one floor was situated in a room hired by another family which occupied a room on a higher floor, where it was conveniently placed for washing the children. Lord Llandaff's Commission had amongst other interesting exhibits the opportunity of seeing a vessel containing dead mice and mud which it was stated had been removed from an East-end cistern. In dealing with similar pollutions Mr. Simon went into great detail as to the contamination of cisterns in the City 50 years ago and he remarked: "Everyone who is personally familiar with the working of this system of intermittent supply, can testify to its inconvenience; and though its evils press with immeasurably greater severity on the poor than on the rich, yet the latter are by no means without experience on the subject." In summing up the essential conditions of a good water-supply he insists "that there should always and uninterruptedly be a sufficiency of water to fulfil all reasonable requirements of the population."

Theoretically, Parliament soon became convinced that a constant supply was necessary. Practical expression was given to this opinion by the Metropolis Water Act of 1852 (15 & 16 Vict. cap. 84).

Section XV. of this Act provided that after the expiration of five years from that date every company, subject to the provisions of the special Act relating to the company, should provide and keep in the district mains already laid down or hereafter to be laid down by them *a constant supply of pure and wholesome water* sufficient for the domestic use of the inhabitants of all houses supplied by the company at such pressure as would make the water reach the top storey of the highest of such houses, but not exceeding the level prescribed by the special Act of such company,[2] but it was provided that no company should be bound to provide a constant supply of water to any district main until four-fifths of the owners or occupiers of the houses on such main should in writing under their hands require the company to provide such supply, nor even upon such requisition, in case it could be shown by the company objecting to the alteration that more than one-fifth of the houses on such main were not supplied with suitable water fittings, constructed according to the regulations prescribed either by an Act of Parliament or made by the company with the approval of the Board of Trade; and after any such requisition for a constant supply should be delivered to the company it should be lawful for a surveyor, acting under the authority of the company, between certain specified hours, to enter into any house which would be affected by the alteration, in order to ascertain whether the water fittings in the house conformed with the regulations; and it was further provided that any company might, with the consent of the Board of Trade, suspend the giving of a constant supply, or give it in succession to the several districts of the company or any parts of such districts as might be found to be convenient; and the company were allowed, after due notice, to abstain from supplying or to cut off the communication pipes and withdraw the supply of water from any house in which the water apparatus was not in conformity with the regulations.

It will be readily seen that rather cumbrous proceedings were necessary to enforce the working of the provisions of this Act, and the result was that they were not used, and as a matter of fact no requisition for constant supply was ever made under the Metropolis Water Act of 1852. A Parliamentary Committee which was appointed in the year 1871 to report on the Metropolis Water Bill introduced that year pointed out that a written requisition of four-fifths of the inhabitants of a clearly defined area could not be easily obtained even for a good object, but that was not the only difficulty in this particular case, because the term "district main" in the Act of 1852 had no clear and definite meaning, and therefore the terms of the requisition rendered the provision "wholly nugatory." Evidently those who framed the Act were more to blame in the matter than the unfortunate water consumers.

Between the years 1852 and 1871 questions concerning water-supply frequently engaged the attention of Parliament. A report of the Royal Commission on the Prevention of the Pollution of Rivers appeared in the year 1866, and ultimately led to legislation. The outbreak of cholera which was traced to the water distributed by the East London Company led to the introduction of Bills by that company and these were reported on by a committee of the House of Commons in the year 1867. Two years later a Royal Commission issued a report on water-supply. These reports and other evidence led the Parliamentary Committee in 1871 to insist on the advantages of a system of constant supply, and in consequence of their advice the Metropolis Water Act of that year was passed. Under the provisions of this Act the matter was placed in the hands of various metropolitan authorities—for the City their Corporation, for other parts of

[1] Report on the Sanitary Condition of the City of London for the year 848, by John Simon, F.R.S. The report is dated Nov. 6th, 1849.

[2] The Kent Waterworks and the Hampstead Waterworks Company (a business afterwards acquired by the New River Company) were not required to give a supply at any height exceeding 180 feet above Trinity high-water mark, nor the East London Water Company to any height exceeding 40 feet above the level of the pavement nearest the point at which such supply should be required

the metropolis the Metropolitan Board of Works, and for other places the commissioners, local boards, or vestries. The sections of the Act which apply to constant service are Sections 7 and 8.

Under Section 7 every company might, and from and after the expiration of eight months from the passing of the Act every company was compelled, when required so to do, in the manner directed by the Act, to provide and keep throughout their water limits a constant supply of pure and wholesome water sufficient for the domestic purposes of the inhabitants within those limits constantly laid on at such pressure as would make it reach the top storey of the highest houses within the area (but not exceeding the level prescribed by the special Act of each company), and every such company was required, subject to the provisions of the special Act as the same are amended by the Act, to give the inhabitants of the area a constant supply for domestic purposes in the manner prescribed. Section 8 provided that at any time after the expiration of six months from the passing of the Act the metropolitan authority should, whenever they were of opinion that there should be in any district a constant supply, make application to the company within the water limits in which the district is situated, requiring a constant supply in the district, and any company might without any such application propose to the metropolitan authority to give a constant supply in any district.

Sections 26, 27, and 28 dealt with the provision and regulation of the fittings necessitated by water supplied on the constant system and for the publication in the *London Gazette* of notices of the alteration in the system of supply.

In the year 1897 a Metropolis Water Act was passed (60 & 61 Vict. cap. 55) and fresh regulations were made to ensure that continuous supply should be given by the water companies. Under the provisions of this Act any consumer or any local authority was empowered to bring before the Railway and Canal Commissioners any complaint as to the quantity and quality of water supplied or their failure to perform any statutory duty. The Railway and Canal Commissioners were empowered to impose penalties and to direct the removal of the cause of complaint. Water consumers were allowed to have (if they could get it) the assistance of the local authorities in obtaining the determination of any question of general interest in reference to the quantity and quality of the water supplied or the charges made by the companies. The local authorities were authorised to become parties to the legal proceedings and to make themselves liable for costs. Lord Llandaff's Commission in their report say they have been struck by repeated instances of ignorance or neglect on the part of the local authorities and of the water consumers for whose benefit these enactments were made. The local authorities which are empowered under the provisions of the Metropolis Water Act of 1897 to assist any water consumer who may feel himself aggrieved are the council of any county, borough, or district, for the City the Corporation of London, and any vestry, district board, or local board of health in the county of London, each authority having such power in the district in which the aggrieved water consumer is living. Under the provisions of the London Government Act, 1899 (62 & 63 Vict. cap. 14) the metropolitan boroughs have been entrusted with the powers and duties formerly possessed by the vestries in regard to the water-supply. In the interests of the people of London it is to be hoped that they will exercise their power to ensure a constant service of water throughout the whole of London. When there is a constant water-supply cisterns are not only unnecessary and useless, they are harmful, inasmuch as they introduce the possibilities of contamination of the stored water

Enough, we hope, has been said to show that the new regulations which the metropolitan water companies wish to impose on the people of London ought not to be legalised.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Karl Haegler, *privat-docent* of Surgery, and Dr. Friedrich Egger, *privat-docent* of Medicine, have been appointed Extraordinary Professors.—*Berlin:* Dr. Georg Wetzel has been recognised as *privat-docent* of Anatomy, Dr. Felix Klemperer as *privat-docent* of Medicine, and Dr. Karl Bruhns as *privat-docent* of Dermatology.—*Copenhagen:* Dr. J. Fibiger has been appointed to the chair of Pathological Anatomy in succession to the late Dr. Lange.—*Kiel:* Dr. Theodor Kirchhoff, *privat-docent* of Psychiatry, has been granted the title of Professor.—*Leipsic:* Dr. Richard Burian has been recognised as *privat-docent* of Physiology. A new dermatological clinic has been opened; it is replete with apparatus for Roentgen rays, for urethroscopy, cystoscopy, and the Finsen light treatment, and it is under the charge of Professor G. Riehl.

THE WAR IN SOUTH AFRICA.

FROM a medical point of view the most striking news from South Africa is the appearance of plague at the Cape. The first cases occurred at the Cape Town docks. The outbreak has so far been of a very limited extent, but the two important points connected with it are the appearance of some disease among the rats giving rise to their wholesale migration, and the spread of the infection as indicated by the occurrence of some cases of plague at other places than the docks. It was noticed that the rats at the south arm of the docks, where the military transports discharge, were making an exodus and migrating to the military camp at Greenpoint at which place they soon commenced to swarm. We have said the alleged occurrence of plague because Dr. Edington, the Government bacteriologist, maintains that the disease from which the city rats are suffering is not bubonic plague. On the other hand, medical opinion at the Cape declares that there can be little or no doubt as to the identity of the disease with bubonic plague in the patients under treatment, and stringent measures have been, or are being, taken on that assumption with the view of preventing its spread. The local Government and the civil and military authorities and colonial medical officer of health at Cape Town are acting in concert and a crusade is in progress against rats. Cape Town is below the standard of what it should be according to our present ideas of sanitation. The district where some of the cases have occurred is densely populated by Kaffirs and coloured people. The disease is mainly confined to the Kaffirs, but a few cases have occurred in widely separated parts of the city and one European has been attacked. The existence of plague has, we believe, been officially admitted. It cannot be denied that this is a serious and embarrassing occurrence, but it does not at all follow that, if it be veritably and indeed bubonic plague, it should assume epidemic proportions. Among the principal measures required to be taken are, the prompt isolation of the infected, the introduction of a system of plague inoculation, the wholesale destruction of rats, the evacuation of infected houses and sites, the provision of suitable camping grounds and camps, and, as far as practicable, the application of those sanitary and hygienic measures which have been found generally useful and efficacious in dealing with epidemic diseases of any kind. There is no more practical and effective measure that a change of site under such circumstances.

As regards the South African war news, it may be said that after a period of inaction the war is being prosecuted with energy and with results which, so far as they go, may be regarded as favourable to the British forces. It is evident that Lord Kitchener's movements have been, and still are, much hampered by the want of more mounted troops to follow up any defeats of the Boer forces by actively pursuing them when in retreat, capturing their convoys, and compelling them to surrender. As Lord Roberts has explained in his despatches, he was fully aware when he undertook and successfully carried out his rapid plan of campaign that he was compelled to set aside the ordinary rules of war and accept all the risks to which his strategy laid him open. Although the object was attained and the military precautions usually adopted were set aside in order to do this, it did not follow that the risks were overcome or removed. The tactics of the Boer leaders at the present time are to take any advantage, to surprise and attack isolated posts and lines of communication wherever possible, and thus to prolong the war in the hope of "something turning up." But time is nevertheless fighting against them and when large reinforcements of mounted troops have arrived Lord Kitchener will, it is to be hoped, be in a position to carry on his present system of warfare with redoubled vigour. That the Boers are now fighting with something very like desperation may be inferred from the large numbers of killed on both sides as compared with wounded which have characterised many of their late engagements.

In addition to the list of casualties attributable to the recent fighting in various directions we regret to notice that the lists of the sick and dead from enteric fever and other diseases continue to be lengthy ones.

THE LANCET RELIEF FUND.

TWELFTH ANNUAL REPORT OF THE ALMONERS.

THE LANCET Relief Fund, which has for its Almoners the President of the Royal College of Physicians of London (Sir WILLIAM SELBY CHURCH, Bart., M.D. Oxon.), the President of the Royal College of Surgeons of England (Sir WILLIAM MACCORMAC, Bart., K.C.V.O., F.R.C.S. Eng., F.R.C.S. Irel., M.Ch.), the President of the General Medical Council (Sir WILLIAM TURNER, K.C.B., M.B. Lond., F.R.C.S. Eng. and Edin., F.R.S.), Mr. THOMAS WAKLEY, F.R.C.S. Eng., and Mr. THOMAS WAKLEY, jun., L.R.C.P. Lond., with Sir HENRY PITMAN, M.D. Cantab., F.R.C.P. Lond., as Honorary Auditor, came into operation on the 1st of February, 1889.

In presenting the twelfth annual report the Almoners think it well again to direct attention to the object for which the Fund was established.

The Fund is sustained solely by the Proprietors of THE LANCET who provide every January the sum of at least £300 and is administered free of cost, with the object of affording immediate pecuniary assistance to registered medical practitioners or to the widows and orphans of members of the profession in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require.

When the Fund was inaugurated considerable misapprehension existed as to the precise objects for which it had been established; and as a result the majority of the earlier applications, being cases of *chronic* distress, and not coming, therefore, under the designation of *emergency*, could not be entertained. Attention was called to this fact in THE LANCET of Feb. 16th, 1889, in the following words:—

> We are requested by the Almoners to state that, from the character of a number of the applications received, both personally and by letter, for relief, it is evident that in many cases the object for which this Fund has been established is not quite clearly understood; and if relief had been afforded in the cases of those who suffer from chronic distress the Fund would have been completely exhausted within the first few days of its existence. They would therefore be greatly obliged if those readers of THE LANCET who may be asked to endorse applications would carefully peruse the Application Form and explain the precise object of the Fund to those applicants whose cases do not seem to come within the scope of the purpose for which the Fund has been established, which is to afford prompt aid to registered medical practitioners, or to the widows or orphans of members of the profession, who, in consequence of the supervention of some unexpected emergency, which is not likely to recur, have pressing need of immediate and temporary pecuniary relief.

And who, it may once more be pointed out, are likely to be permanently benefited thereby.

The balance in hand at the end of 1899 amounted to the sum of £358 1*s.* 6*d.* On Jan. 1st, 1900, the Proprietors of THE LANCET placed to the credit of the Fund the sum of £300. The sum of £305 has been granted in relief either by way of loan or of gift, leaving a balance of £352 17*s.* 4*d.* as per Statement of Accounts.

There have been considered altogether during the 12 months ending Dec. 31st, 1900, 42 applications for relief (the number the previous year having been 33). In 34 cases assistance was awarded either as a loan or as a gift, according to the request of the applicant, the amount of the grants ranging this year from £5 to £20.

The Almoners are glad to find from the letters received from recipients of the Fund that it continues to be of service to unfortunate members of the profession and that the particular object of assisting cases of emergency and immediate distress has been attained. (Signed)

WILLIAM MACCORMAC (Chairman). W. S. CHURCH.
WM. TURNER. THOMAS WAKLEY.
THOMAS WAKLEY, Junr.

Statement of Accounts for the Year ending Dec. 31st, 1900.

Dr.	£	s.	d.
To Balance at the London and Westminster Bank, Limited (Westminster Branch), Jan. 1st, 1900	358	1	6
,, Proprietors of THE LANCET, Jan. 1st, 1900 ...	300	0	0
	658	1	6
To Balance at Bank	£352	17	4

Cr.	£	s.	d.	£	s.	d.
By Loans:—						
Case No. 462	20	0	0			
,, 473	10	0	0			
,, 475	10	0	0			
,, 477	20	0	0			
				60	0	0
By Gifts:—						
Case No. 454	5	0	0			
,, 455	5	0	0			
,, 457	5	0	0			
,, 458	5	0	0			
,, 459	10	0	0			
,, 461	10	0	0			
,, 463	5	0	0			
,, 465	5	0	0			
,, 466	15	0	0			
,, 467	10	0	0			
,, 468	10	0	0			
,, 469	10	0	0			
,, 470	10	0	0			
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,, 482	5	0	0			
,, 483	10	0	0			
,, 484	10	0	0			
,, 485	10	0	0			
,, 486	10	0	0			
,, 487	5	0	0			
,, 488	5	0	0			
,, 489	5	0	0			
,, 490	5	0	0			
				245	0	0
,, Cheque Book	...	...		0	4	2
,, Balance at Bank, Dec. 31st, 1900	...	...		352	17	4
				£658	1	6

I find by the Bankers' Book that the actual balance on Jan. 1st, 1900, to the credit of the Fund was £358 1*s.* 6*d.*, to which the sum of £300 was added by the Proprietors of THE LANCET on Jan. 1st, 1900.

The balance at the Bank on Dec. 31st, 1900, was the sum of £352 17*s.* 4*d.* I have also checked the receipts for disbursements and find the above account strictly accurate

January 25th, 1901.

HENRY A. PITMAN, Hon. Auditor

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

II.[1]

WE now come to that portion of Mr. Shirley Murphy's report which deals with the prevalence and fatality of the commoner forms of infectious disease. For the last two years London has been practically free from small-pox, only 29 cases having been notified in the year 1899 and 33 cases in the preceding year. The London death-rate from small-pox has been scarcely appreciable since the year 1895 and throughout the 10 years 1889-98 it has been below the rate of Paris, Brussels, St. Petersburg, Vienna, Rome, and New York. The fortunate immunity of London from serious invasion by small-pox is, however, to be attributed solely to the promptitude with which the earliest cases have been recognised and isolated. Had it been otherwise the cases freshly imported from time to time, few though they have been, would inevitably have caused a general prevalence of small-pox long before the present time, especially in a community like our own which is so largely composed of unvaccinated children. Having regard to the serious epidemic of small-pox now existing in Glasgow, between which city and the metropolis intercommunication is constant, prudent parents will give heed to Mr. Shirley Murphy's solemn warning, which is to the effect that ever since the appointment of the Royal Commission on vaccination the proportion of unvaccinated children in London has steadily increased year after year. The figures for years subsequent to 1897 are not as yet available, but in that year we learn that the proportion of children not finally accounted for as regards vaccination amounted to 29·1 per cent. of the total births. It may therefore safely be assumed that as the proportion of unvaccinated children has steadily increased during the last decade at least one-third of the children born in London are at the present time suffered to remain unprotected against small-pox.

Judged by the mortality alone London would almost seem to have been freer from scarlet fever in 1899 than in any previous year since the passing of the Notification Act; but on reference to the column showing the number of attacks recorded this appears to be due to the exceptionally low fatality (2·2 per cent.) among the recorded attacks, for the cases of scarlet fever actually notified in 1899 were relatively more numerous than they had been either in the year 1891 or in 1898. The scarlet fever death-rate of London last year was lower than that of any of the other large English towns except Manchester, Birmingham, Bristol, and West Ham, and also lower than that of any of the principal foreign cities except Paris, Brussels, Amsterdam, and Rome. Mr. Shirley Murphy refers yet again in the present report to the occurrence in certain London sanitary districts of "return cases" of scarlet fever —i.e., cases occurring in houses shortly after the return home of a previous case which had been discharged apparently cured from hospital. In Paddington there were nine such cases, in Plumstead 14, in Kensington four, in Fulham 10, and in Stoke Newington three. It appears that in most of these cases the child who had caused the mischief was found on return from hospital to be suffering either from nasal discharge or from enlarged glands. Mr. Shirley Murphy quotes the opinion of the medical officer of health of Stoke Newington to the effect that special provision should be made for the isolation of such cases as the above or at any rate that the medical officer of health should be warned of their return home so that they may be watched. From the present report we learn that "return cases" not infrequently occur in connexion with the convalescent stage of diphtheria also, they are by no means limited to scarlet fever.

Diphtheria was more prevalent in London during 1899 than in the preceding year; the reported cases also exceeded the annual average for 1891-98. The case fatality among the reported attacks was, however, lower last year than in any year since the passing of the Notification Act. Compared with 11 of the largest English towns the London death-rate from diphtheria was higher last year than that of any other except Leeds, Sheffield, and West Ham, whilst it was higher than that of any of the chief foreign cities except Stockholm, St. Petersburg, and New York. The use of antitoxic serum is being encouraged by the sanitary authorities of many of the London districts, some of them charging a fee for the serum, whilst others supply it without charge. Mr. Shirley Murphy states that this provision for the safety of the public is generally appreciated by medical practitioners, who consequently always know where to apply for the serum in case of emergency. In Lambeth the use of antitoxin appears to have been especially satisfactory, for out of 53 cases in that parish thus treated the results were successful in 52. The reduction in the case fatality of diphtheria in recent years is remarkable and highly satisfactory; it is shown graphically in a chart contained in the report. The relative incidence of diphtheria attack upon London children from three to 13 years of age continues to increase from year to year. This is shown in a table which we have not space to reproduce here. Mr. Shirley Murphy adds some useful words of caution with reference to the occurrence of diphtheria attacks in undue proportion among children at school ages. He states his opinion that, irrespective of the general prevalence of this disease, be it great or small, in any locality, a notable increase in the ratio of attacks at school ages should always be taken as the signal for special watchfulness, because such increase may be due to school attendance; and in this way is very likely to be the precursor of a serious outburst of the disease, although there may be no concurrent excess of attacks at other than school ages. Thus, for example, in a particular school cases of diphtheria may occur at intervals far apart from each other in point of time—so far apart, indeed, as to obscure the share the school is taking in spreading the disease. Nevertheless, the succession between the known attacks may be maintained by means of unrecognised cases, although there may exist no abnormal general prevalence of the disease to cause alarm. The disastrous school outbreak at Lewisham in 1896 is quoted as an illustration of the concurrence of a decrease of attacks among the general population with a relative increase among school children, the latter increase culminating in the serious outbreak referred to. We regret to learn that during the last two years the percentage of attacks among school children at Lewisham has again been increasing and that there has been concurrently a serious increase in the number of fresh cases of the disease outside schools in that district. It would therefore appear desirable to inquire, as Mr. Shirley Murphy does inquire very pertinently, whether infection at school was once more responsible for the large prevalence of diphtheria at Lewisham in 1899.

For several years past Mr. Shirley Murphy has commented in considerable detail on the behaviour of typhus fever in the older and poorer parts of the metropolis. Within the memory of many practitioners still living typhus fever was one of the most terrible scourges of certain well-known districts. Even so recently as the year 1869 this disease was responsible for a death-rate of 690 per 1,000,000 of the London population as a whole, and in the denser and more insanitary areas the mortality amounted to many times this figure. Throughout the last decade, however, typhus fever has been attended by but insignificant fatality in London, the deaths in the whole county numbering only two last year and three the year before. The parts of London which have in recent years been associated with the spread of typhus fever are Bermondsey, Rotherhithe, and the neighbouring district of St. George-the-Martyr. The frequent recurrence of typhus fever in this part of London is noteworthy and the history of the cases reported shows how readily the disease may be overlooked, especially in its milder forms. There is much probability that the disease has retained a foothold in these parts through the medium of unrecognised cases. It is well known that the severity of typhus fever varies greatly and the attacks especially amongst children, are often so slight as to amount to little more than mere poorliness. "There is, therefore" says Mr. Shirley Murphy, "no improbability that the disease has been maintained in these districts by persons suffering from so mild a form of typhus that it is impossible to recognise the malady, the cases coming to light being a few of the total number who are suffering from more severe attacks. If natural causes may reduce the severity of disease they

[1] No. I. was published in THE LANCET of Feb. 9th, 1901, p. 421.

may also increase it, and in that event there is no certainty that there will not eventually be much greater prevalence of typhus than has been experienced in late years."

Enteric fever showed greater prevalence in London last year than in any other year since the passing of the Notification Act, the reported cases being in the proportion of 1 in each 1000 of the population. In several instances Mr. Shirley Murphy quotes illustrations of the communication of enteric fever from one person to another. Thus, in the district of Kensington the illness of one person was followed by that of 11 other persons associated with the first sufferer or others infected by him; 10 houses in all were thus invaded. In Fulham a series of six cases was reported, and in St. Pancras a series of nine cases in a family of 11 persons. In yet another district account is given of three similar groups in which the number of persons thus infected from a common source was respectively six, six, and eight. The experience of enteric fever in 1899, as, indeed, in that of previous years, points to the spread of enteric fever infection from previous cases of this disease, the nature of the illness in the first case not having been recognised. It further shows the risk of the retention of cases of enteric fever in the houses of poor persons when circumstances do not allow of efficient isolation. The early recognition of enteric fever, the use of the Widal test in doubtful cases, the isolation of the sufferer, and the employment of nurses beyond middle life to attend upon the sick are, in Mr. Shirley Murphy's opinion, the precautions which are needed to limit the spread of enteric fever.

We are glad to note that the interesting diagram showing the relation of overcrowding to phthisis mortality—which we noticed for the first time in the report for 1898—has been repeated in the report before us. The diagram shows that in 1899, as in the previous year, the mortality from all causes, from phthisis, and from diseases other than phthisis, increases with overcrowding, and that the maximum increase from diseases other than phthisis occurs somewhat earlier in life than does the maximum increase from that disease itself. Mr. Shirley Murphy's remarks on the relation of the dwelling-house to the production of phthisis are eminently practical and he presses them home very effectively with the help of the diagram before mentioned. In concluding our notice of this excellent report we would especially commend this particular part of it to the study of those who are interested in the success of the outdoor treatment of consumption, feeling confident that it will be found both suggestive and profitable reading.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on Feb. 7th, Sir WILLIAM MACCORMAC, Bart., K.C.V.O., the President, being in the chair.

The following Address of Condolence was passed and the College seal was affixed:—

THE HUMBLE ADDRESS OF THE PRESIDENT, VICE-PRESIDENTS, AND COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND TO

HIS MOST EXCELLENT MAJESTY EDWARD VII., King of Great Britain and Ireland.

MAY IT PLEASE YOUR MAJESTY,—We, the President, Vice-Presidents, and Council of the Royal College of Surgeons of England, venture to approach Your Majesty in order to express our profound grief at the death of Your Majesty's beloved mother, our late revered Sovereign, and we humbly solicit Your Majesty graciously to receive our earnest and respectful sympathy.

We desire to record our heartfelt sorrow at the loss of a Sovereign whose reign has brought unexampled prosperity to the empire and whose dignity of life and unselfish devotion to duty have won the lasting admiration and gratitude of her subjects.

Wise and liberal in her rule and ever solicitous for the welfare and happiness of the nation, Queen Victoria will live in the hearts of her people the symbol of all that is noble and good.

We also desire respectfully to express to Your Majesty our dutiful allegiance and unswerving devotion, and we fervently pray that Your Majesty may long reign in the affections of a loyal, happy, and united people.

In witness whereof, We, Your Majesty's loyal and dutiful subjects, have caused the Common Seal of the College to be hereunto affixed this 7th day of February, 1901.

The PRESIDENT reported that owing to the lamented death of Her Majesty Queen Victoria it had been determined that the dinner arranged in connexion with the Hunterian Festival on Feb. 14th should not take place, but that the Hunterian Oration should be delivered at 4 P.M. on that day in accordance with the terms of the Hunterian Trust.

On the recommendation of the Museum Committee the Council authorised the purchase of two Chinese skeletons and of some Chinese skulls.

The Council passed a vote of thanks to Mr. Alfred Sievekking, of the Uganda Railway Service, for a gift of ethnological specimens from East Africa.

Mr. Thomas Bryant was re-appointed as representative of the College on the General Medical Council for a further period of three years.

In response to an invitation from the Chancellor, Council, and Senate of the University of Glasgow, the President, Sir William MacCormac, the Senior Vice-President, Mr. John Langton, and Mr. Mayo Robson were appointed delegates from the College on the occasion of the ninth jubilee celebrations of the University in June next.

The Secretary was authorised to remove from the list of Members published in the College Calendar the names of all Members admitted before the year 1843 whom he may be unable to trace as still living.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6908 births and 4473 deaths were registered during the week ending Feb. 9th. The annual rate of mortality in these towns, which had declined from 19·6 to 16·4 per 1000 in the four preceding weeks, rose again last week to 19·8. In London the death-rate was 18·7 per 1000, while it averaged 20·5 in the 32 large provincial towns. The lowest death-rates in these towns were 12·3 in Cardiff, 12·4 in Croydon, 14·4 in West Ham, and 15·1 in Bolton and in Bradford; the highest rates were 24·7 in Manchester, 27·5 in Salford, 27·9 in Liverpool, and 29·5 in Norwich. The 4473 deaths in these towns included 397 which were referred to the principal zymotic diseases, against 374, 347, and 323 in the three preceding weeks; of these, 129 resulted from whooping-cough, 101 from diphtheria, 57 from measles, 44 from "fever" (principally enteric), 40 from diarrhœal diseases, and 26 from scarlet fever. The lowest death-rates last week from these diseases occurred in Brighton, Swansea, Norwich, Burnley, and Huddersfield; and the highest rates in Nottingham, Birkenhead, Salford, and Blackburn. The greatest mortality from measles occurred in Liverpool; and from whooping-cough in Croydon, Plymouth, Bristol, Nottingham, Birkenhead, and Preston. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 101 deaths from diphtheria included 29 in London, 10 in Sheffield, eight in Leeds, eight in Liverpool, eight in Manchester, seven in Blackburn, and six in Leicester. No fatal case of small-pox was registered in any of the 33 large towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday, Feb. 9th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1963, against numbers declining from 2535 to 2037 on the six preceding Saturdays; 145 new cases were admitted during the week, against 187, 172, and 178 in the three preceding weeks. Influenza was certified as the primary cause of 12 deaths in London last week. The deaths referred to diseases of the respiratory organs in London, which had been 422, 394, and 323 in the three preceding weeks, rose again last week to 397, but were 75 below the corrected average. The causes of 75, or 1·7 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Croydon, Bristol, Bolton, Oldham, and in eight other smaller towns. The largest proportions of uncertified deaths were registered in Birmingham, Liverpool Blackburn, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·1 and 22·2 per 1000 in the two preceding weeks, further rose to 23·2 during the week ending Feb. 9th, and showed an excess of 3·4 per 1000

over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 14·4 in Leith and 20·3 in Dundee to 25·5 in Glasgow and 27·4 in Paisley. The 726 deaths in these towns included 37 which were referred to whooping-cough, 18 to diarrhœa, 14 to measles, 11 to small-pox, 10 to "fever," seven to diphtheria, and six to scarlet fever. In all 103 deaths resulted from these principal zymotic diseases, against 106 and 126 in the two preceding weeks. These 103 deaths were equal to an annual rate of 3·3 per 1000, which was 1·5 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The deaths from whooping-cough, which had been 39 and 43 in the two preceding weeks, declined again to 37 last week, and included 27 in Glasgow, five in Edinburgh, two in Dundee, and two in Greenock. The fatal cases of diarrhœa, which had been 15 and 27 in the two preceding weeks, declined again last week to 18, of which eight were registered in Glasgow, three in Dundee, two in Aberdeen, and two in Leith. The deaths from measles, which had been 23, 18, and 16 in the three preceding weeks, further declined to 14 last week, and included six in Edinburgh and six in Aberdeen. The deaths from small-pox, which had been three, 11, and 24 in the three preceding weeks, declined again to 11 last week, and included 10 in Glasgow and one in Paisley. The fatal cases of "fever," which had been 15 and six in the two preceding weeks, rose again last week to 10, of which nine were recorded in Glasgow. The deaths from diphtheria, which had been eight and seven in the two preceding weeks, were again seven last week, and included two in Glasgow, two in Edinburgh, and two in Dundee. The six fatal cases of scarlet fever showed an excess of three over the number in the preceding week and included four in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 145 and 123 in the two preceding weeks, rose again last week to 158, but were 84 below the number in the corresponding period of last year. The causes of 37, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 30·4, 28·2, and 27·4 per 1000 in the three preceding weeks, rose again to 34·0 during the week ending Feb. 9th. During the past four weeks the death-rate in the city has averaged 30·0 per 1000, the rates during the same period being 17·8 in London and 21·2 in Edinburgh. The 226 deaths belonging to Dublin registered during the week under notice were 44 in excess of the number in the preceding week, and included 16 which were referred to the principal zymotic diseases, against 20 and 18 in the two preceding weeks; of these, nine resulted from whooping-cough, five from "fever," and two from diarrhœa. These 16 deaths were equal to an annual rate of 2·4 per 1000, the zymotic death-rate during the same period being 1·5 in London and 2·5 in Edinburgh. The fatal cases of whooping-cough, which had been eight and 12 in the two preceding weeks, declined again last week to nine. The deaths referred to different forms of "fever," which had been six and three in the two preceding weeks, rose again to five during the week under notice. The 226 deaths in Dublin last week included 37 of children under one year of age and 61 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a marked excess over the numbers recorded in the preceding week. Eight inquest cases and six deaths from violence were registered, and 70, or nearly one-third, of the deaths occurred in public institutions. The causes of 15, or nearly 7 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING JANUARY, 1901.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the 29 boroughs and cities in the county of London. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·2 per 1000 of the population, estimated at 4,651,113 persons in the middle of the year. In the three preceding months the rates had been 10·7, 10·0, and 8·0 per 1000 respectively. The rates were considerably below the average in Kensington, Westminster, St. Marylebone, City of London, and Wandsworth; while they showed the largest excess in Hammersmith, Fulham, Bethnal Green, Poplar, and Deptford. Four cases of small-pox were notified last month, of which one occurred in Kensington, one in Hampstead, one in Stepney, and one in Poplar. Four small-pox patients were admitted into the Metropolitan Asylums hospitals during the month, and three remained under treatment on Saturday, Feb. 2nd. Scarlet fever was considerably less prevalent than it had been during the four preceding months; among the various metropolitan boroughs this disease showed the greatest proportional prevalence in Hammersmith, Fulham, Stoke Newington, Deptford, and Lewisham. The Metropolitan Asylums hospitals contained 1979 scarlet fever patients at the end of January, against 2569, 2659, and 2460 at the end of the three preceding months; the weekly admissions averaged 164, against 314, 259, and 214 in the three preceding months. The prevalence of diphtheria also showed a marked decline as compared with that recorded in recent months; the greatest proportional prevalence of this disease occurred in Hammersmith, Fulham, Bethnal Green, Poplar, and Deptford. There were 1113 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 1458, 1524, and 1343 at the end of the three preceding months; the weekly admissions averaged 129, against 206, 185, and 157 in the three preceding months. The prevalence of enteric fever last month showed a continued decrease from that recorded in each of the two preceding months; among the various metropolitan boroughs this disease was proportionally most prevalent in Hammersmith, Chelsea, City of London, Bethnal Green, Stepney, and Bermondsey. The number of enteric fever patients in the Metropolitan Asylums hospitals, which had been 444, 436, and 403 at the end of the three preceding months, had further declined to 289 at the end of January; the weekly admissions averaged 32, against 61, 61, and 51 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Holborn, Shoreditch, Bethnal Green, and Deptford boroughs. The 38 cases of puerperal fever included six in Islington, six in Camberwell, and three in Hampstead.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various metropolitan boroughs, the deaths occurring in the public institutions of London having been distributed among the various boroughs in which the patients had previously resided. During the five weeks ending Feb. 2nd, the deaths of 7796 persons belonging to London were registered, equal to an annual rate of 17·5 per 1000, against 15·3, 16·8, and 16·2 per 1000 in the three preceding months. The lowest death-rates last month in the various metropolitan boroughs were 12·4 in Hampstead, 13·1 in Stoke Newington, 13·4 in Wandsworth, 14·5 in Hackney, and 14·7 in Battersea; the highest rates were 21·7 in Finsbury, 22·3 in Bermondsey, 22·8 in Southwark, 23·2 in Bethnal Green, and 24·9 in City of London. During the five weeks of January 632 deaths were referred to the principal zymotic diseases; of these, 140 resulted from measles, 43 from scarlet fever, 127 from diphtheria, 180 from whooping-cough, one from typhus, 74 from enteric fever, and 67 from diarrhœa. The lowest death-rates last month from these diseases occurred in City of Westminster, St. Marylebone, Hampstead, Stoke Newington, Lambeth, Battersea, and Woolwich; and the highest rates in Hammersmith, Fulham, Bethnal Green, Southwark, Bermondsey, and Greenwich boroughs. The 140 deaths from measles showed a decline of 119 from the corrected average number; this disease was proportionally most fatal in Bethnal Green, Southwark, Bermondsey, Camberwell, and Greenwich. The 43 fatal cases of scarlet fever were less than one-half of the average number in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs the greatest proportional mortality from this disease occurred in Fulham, St. Pancras, Bermondsey, Camberwell, and Lewisham. The 127 deaths from diphtheria were 99 below the corrected average; this disease showed the greatest proportional fatality in Hammersmith, Fulham, Stoke Newington, Bethnal Green, and Poplar. The 180 fatal cases of whooping-cough were 137 less than the average in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Fulham, Shoreditch, Bethnal Green, Southwark, Bermondsey, and Greenwich. The 74 deaths from "fever" showed an excess of 14 over the corrected

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1901.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1901.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,651,113	4	1012	910	8	70	2	38	421	—	2765	6·2	—	140	43	127	180	1	74	—	67	632	1·4	7796	17·5	121
West Districts.																										
Paddington	148,148	—	39	18	—	10	—	2	14	—	83	5·8	—	1	—	5	7	—	2	—	2	17	1·2	233	16·4	107
Kensington	177,205	1	32	17	—	17	—	—	12	—	79	4·6	—	—	1	5	4	—	3	—	2	15	0·9	268	15·7	172
Hammersmith	111,213	—	36	33	—	15	—	1	13	—	98	9·2	—	5	2	7	7	—	6	—	—	27	2·5	186	17·4	132
Fulham	141,920	—	41	56	—	10	—	1	19	—	127	9·3	—	1	5	7	13	—	1	—	4	31	2·3	232	17·0	143
Chelsea	73,843	—	13	10	—	8	—	1	2	—	34	4·8	—	—	—	3	7	—	2	—	1	13	1·8	145	20·5	85
City of Westminster	189,375	—	25	13	—	12	—	2	14	—	66	3·6	—	—	—	4	3	—	2	—	3	12	0·7	307	16·9	135
North Districts.																										
St. Marylebone	140,460	—	29	9	—	8	—	—	16	—	62	4·6		—	1	1	5		2	—	1	10	0·7	224	16·6	110
Hampstead	82,605	1	14	15	—	6	—	3	3	—	41	5·2	—	—	—	1	2	—	—	—	2	5	0·6	98	12·4	121
St. Pancras	243,098	—	53	60	—	23	—	—	19	—	155	6·6	—	8	5	6	11	—	6	—	—	36	1·5	462	19·6	133
Islington	353,528	—	76	46	—	24	—	6	28	—	180	5·3	—	4	1	10	15	—	3	—	1	34	1·0	545	16·1	106
Stoke Newington	55,758	—	22	14	—	—	—	—	3	—	39	7·3	—	—	1	2	—	—	—	—	—	3	0·6	70	13·1	83
Hackney	228,417	—	47	48	—	20	—	2	32	—	149	6·8	—	7	—	8	4	—	3	—	3	25	1·1	318	14·5	93
Central Districts.																										
Holborn	59,700	—	14	11	—	6	—	—	10	—	41	7·2	—	—	—	1	—	—	2	—	2	5	0·9	107	18·7	117
Finsbury	106,590	—	16	22	—	8	—	—	10	—	56	5·5	—	—	1	2	4	—	4	—	2	13	1·3	222	21·7	126
City of London	25,289	—	2	3	—	2	—	—	—	—	7	3·0	—	—	1	—	—	—	1	—	1	3	1·3	58	24·9	273
East Districts.																										
Shoreditch	120,614	—	14	22	—	10	1	—	18	—	65	5·6	—	7	—	3	8	—	2	—	3	23	2·0	236	20·4	152
Bethnal Green	127,509	—	22	45	—	17	—	1	20	—	105	8·6	—	10	2	9	9	—	3	—	4	37	3·0	284	23·2	147
Stepney	305,058	1	60	70	—	39	—	2	28	—	200	6·8	—	7	3	7	7	—	7	—	6	37	1·3	593	20·3	126
Poplar	170,465	1	33	68	—	14	—	—	12	—	128	7·8	—	2	—	12	5	—	3	—	4	26	1·6	336	20·6	120
South Districts.																										
Southwark	208,869	—	45	44	—	18	—	—	28	—	135	6·7	—	29	1	5	20	—	3	—	4	62	3·1	457	22·8	131
Bermondsey	136,824	—	32	24	—	15	—	1	12	—	84	6·4	—	12	5	4	8	—	1	—	—	30	2·3	293	22·3	141
Lambeth	318,530	—	78	51	—	17	—	2	18	—	166	5·4	—	4	4	5	5	—	3	—	1	22	0·7	484	15·8	102
Battersea	180,017	—	40	18	—	8	—	1	16	—	83	4·8	—	2	—	3	4	—	2	—	1	12	0·7	255	14·7	130
Wandsworth	242,224	—	38	32	—	15	—	2	22	—	109	4·7	—	—	—	2	11	—	3	—	4	20	0·9	310	13·4	84
Camberwell	269,102	—	54	59	—	24		6	16	—	159	6·2	—	20	5	6	13	—	5	—	6	55	2·1	400	15·5	126
Dept'ford	113,562	—	63	35	8	8		1	16	—	132	12·1	—	6	1	2	2	1	2	—	4	18	1·7	172	15·8	119
Greenwich	91,228	—	22	16	—	8	—	2	8	—	56	6·4	—	11	1	1	5	—	1	—	1	20	2·3	152	17·4	100
Lewisham	112,856	—	34	27	—	4	—	2	5	—	72	6·7	—	3	3	4	—	—	2	—	3	15	1·4	187	17·3	124
Woolwich	114,106	—	18	24	—	4	—	—	7	—	53	4·8	—	1	—	2	1	—	—	—	2	6	0·6	162	14·8	115
Port of London	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 26 cases of membranous croup.

† Including deaths from membranous croup.

average; the highest proportional mortality from "fever" occurred in Hammersmith, Chelsea, St. Pancras, Holborn, Finsbury, and City of London boroughs. The 67 fatal cases of diarrhœa were equal to the average number in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Fulham, Holborn, Bethnal Green, Deptford, and Lewisham. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during January was more than 35 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 121 per 1000. The lowest rates of infant mortality were recorded in Chelsea, Stoke Newington, Hackney, Wandsworth, and Greenwich; and the highest rates in Kensington, Fulham, City of London, Shoreditch, and Bethnal Green.

THE SERVICES.

THE VICTORIA CROSS.

THE *London Gazette* of Feb. 12th announces that Lieutenant W. H. S. Nickerson, R.A.M.C., attached to Mounted Infantry, has been awarded the decoration of the Victoria Cross for the following act of courage:—

At Wakkerstroom, on the evening of April 20th, 1900, during the advance of the infantry to support the mounted troops, Lieutenant Nickerson went, in the most gallant manner, under a heavy rifle and shell fire, to attend a wounded man, dressed his wounds, and remained with him till he had him conveyed to a place of safety.

MENTIONED IN DESPATCHES.

In the South African despatches which have now been presented to both Houses of Parliament the following comments are made and names mentioned for gallantry or conspicuous services:—

From Lord Roberts to the Secretary of State for War, dated March 31st, 1900:—

Surgeon-General W. D. Wilson, M.B., has had responsible and important duties to perform. The arrangements necessary to provide for the wants of the many sick and wounded in South Africa have required unremitting care and forethought, and the successful way in which they have been carried out reflects the greatest credit on him.

Colonel W. F. Stevenson, M.B., R.A.M.C., has been principal medical officer with the force, and I desire to draw attention not only to the efficient manner in which he has supervised the working of the Corps but also to the assistance I have received from him at all times. I cannot speak too highly of the care and devotion shown by the medical officers to the sick and wounded, or of the gallant way in which many of them have exposed themselves when performing their duties on the field of battle.

Mr. Watson Cheyne, M.B., F.R.S., and Mr. Kendal Franks, M.B., F.R.C.S.I., consulting surgeons, who have accompanied the army, have rendered invaluable service by their advice and assistance to the medical officers. They have been unwearying in their work among the wounded and sick, and, humanly speaking, many a valuable life has been saved by their skill.

Major J. H. Fiaschi, New South Wales Medical Staff Corps, is deserving of special mention on account of the assistance which he rendered to the sick and wounded, as well as upon the efficient condition in which he has kept the ambulance under his command, the services of which, ever since its arrival, have been most valuable.

Lieutenant-Colonel W. R. Donovan, R.A.M.C., principal medical officer of the Cavalry Divisional Staff and Troops.

Cape Medical Bearer Company.—Captain J. J. Brownlee and Serjeant A. Bettington.

Bearer Company, Royal Army Medical Corps.—Major R. H. S. Sawyer and Captain P. J. Probyn.

Major-General Baden Powell's despatches to Lord Roberts, dated May 18th, 1900, referring to the siege of Mafeking:—

Major Anderson, Royal Army Medical Corps, throughout the siege showed untiring zeal, coupled with coolness and gallantry in attending the wounded under fire in action, in addition to his eminent professional ability. Latterly, as principal medical officer, his unfailing tact and administrative capabilities rendered his services of greatest value. The strain of his devotion to his duty told heavily on his health.

Medical Staff.—Dr. W. Hayes, Surgeon Major Holmden, British South Africa Police, and Dr. T. Hayes. All worked with conspicuous zeal and skill under a never-ending strain of work; all of them very frequently under fire in carrying out their duties, even in their own hospital.

From Sir Charles Warren to Lord Roberts, dated June 29th, 1900, describing the action in the vicinity of Fabers Put on May 30th:—

The main farmhouse was rapidly cleared out and turned into a hospital under the directions of the senior medical officer. All the medical arrangements were most satisfactory, the following officers having done very excellent work, not only in the hospital, but also in the field dressing the wounds under heavy fire—viz.: Major McLaughlin senior medical officer; Major Cox, officer commanding Cape Field Hospital; Major Worthington, attached Canadian Artillery; and Captain C. Smith, attached 8th Battalion Imperial Yeomanry.

From Sir George White to the Secretary of State for War, dated Ladysmith, Dec. 2nd, 1899:—

I also desire to bring to your notice the following ..... have rendered excellent services: ..... Lieutenant-Colonel R. W. Mapleton, R.A.M.C.

Royal Army Medical Corps.—Lieutenant-Colonel P. H. Johnston, Major H. Martin, Major M. W. Kerin, and Captain G. S. Walker.

From Sir George White, dated Cape Town, March 23rd, 1900:—

Colonel R. Exham, Royal Army Medical Corps, did all that a principal medical officer could do in organising the medical services under circumstances of exceptional difficulty, and with *personnel* and *materiel* both inadequate for a siege of such long duration, accompanied by such a great amount of sickness.

Lieutenant-Colonel R. W. Mapleton, Royal Army Medical Corps, in charge of Intombi Hospital Camp, was placed in a most exceptional position, in charge of a neutral camp where the maintenance of discipline in the ordinary way was impossible, but in the face of all difficulties he did everything possible to maintain the sanitation of the camp, and to ensure the well-being of the sick and wounded.

Major F. H. Treherne, Royal Army Medical Corps; Major J. F. Bateson, Royal Army Medical Corps.

Royal Army Medical Corps.—Lieutenant-Colonel S. H. Carter, Major H. Martin, Major R. L. Love, Major M. W. Kerin, Major S. Westcott, Major D. Bruce, and Captain G. S. Walker (died of enteric fever, Feb 23rd, 1901).

Natal Volunteer Medical Staff.—Captain H. T. Platt.

Indian Subordinate Medical Department.—1st Class Assistant-Surgeon J. Moore, 1st Class Assistant Surgeon J. B. Farrell, 1st Class Assistant-Surgeon A. D. McIntyre, 2nd Class Assistant-Surgeon E. St. Romaine, and 2nd Class Assistant Surgeon V. V. Chiodetti.

From Sir Redvers Buller to the Secretary of State for War, dated March 30th, 1900:—

Medical officers attached to regiments and corps.—Major S. Butterworth, Major H. B Hinde, Major A. S. Rose (wounded), Captain M. L. Hughes (killed), Captain R. H. E Holt (killed), Captain N. Tyacke, Captain J. H. Campbell (wounded), Captain C. Dalton (dangerously wounded), and Lieutenant H. B. Onrăt (killed).

Medical officers with bearer companies.—5th Brigade, Major S. Townsend; 10th Brigade, Captain C. Martin; 4th Brigade, Major E. O. Milward; 2nd Brigade, Major J. E. T. Reckett; 6th Brigade, Major T. B. Winter; 11th Brigade, Major Haywood; 5th Brigade, Captain E. M. Morphew; and 6th Brigade, Captain J. D. Alexander.

Medical officers with field hospitals.—2nd Field Hospital, Major J. T. Culling and Captain H. J. Parry; 4th Field Hospital, Major G. T. Goggin, Major P. S. Henston, and Lieutenant and Quartermaster R. Adams; 5th Field Hospital, Major G. H. Younge, Captain E. M. Pilcher, and Lieutenant and Quartermaster J. Hirst; 6th Field Hospital, Major J. B. W. Buchanan and Captain N. Faichnie; 10th Field Hospital, Major E. R. Cree; 11th Field Hospital, Major J. D. Moir, Captain F. G. Faichnie, and Major A. Fitzgerald; 2nd Division Field Hospital, Major A. Baird; and 5th Division Field Hospital, Major J. G. Black.

Volunteer Ambulance Corps.—Major H. Wright, Gordon Highlanders; Captain Lord R. Manners, King's Royal Rifle Corps; Lieutenant E. M. Baker, Manchester Regiment; Lieutenant C. W. McD. Findlay, Gordon Highlanders; Second Lieutenant J. R. E. Stansfield, Gordon Highlanders; and Second Lieutenant P. D. Stewart, Gordon Highlanders.

Indian Ambulance Corps.—Mr. Clarence, superintendent; Mr. Ghandi, assistant superintendent.

The medical arrangements have been everything that could be desired. I am sure that I only express the feelings of the whole force when I say everyone is grateful to Sir William Mac Cormac, Mr. Treves, and Sir William Stokes, whose skill has saved several lives and mitigated much suffering, and whose knowledge and experience have been a blessing to the sick and wounded.

Colonel T. J. Gallwey, C.B., principal medical officer, has devoted himself to his work with marked success, and it is largely due to his great administrative powers and forethought that everything has worked so smoothly.

Colonel J. A. Clery, who has been in charge of the general hospital at Mool, has displayed great powers of organisation and readiness to overcome difficulties. His hospital is a source of admiration to all who have visited it.

Lieutenant-Colonel W. B. Allin has been principal medical officer of the force in the field, and has had to make all the arrangements for the evacuation of hospitals and the removal of the wounded, which have, under great difficulties, been performed with great regularity, and yet with the greatest consideration for the wounded.

Lieutenant-Colonel P. H. Johnston has been most successful in his management of the general hospital at Pietermaritzburg.

Colonel Gallwey mentions in the highest terms the assistance he has received from his secretary, Major W. Babtie. I have already recommended this officer for the Victoria Cross in recognition of his gallantry at Colenso on Dec. 15th.

Lieutenant E. T. Inkson's name has been specially mentioned to me for having habitually distinguished himself in action and for his care of the wounded under fire.

Where all have worked so well it is difficult to discriminate, but the names of the following officers have been specially brought to my notice:—

Line of communications hospitals.—No. 4 Stationary Hospital, Major B. Kirkpatrick and Major R. Mallins; No. 1 Stationary Hospital, Major F. A. B. Daly; and Estcourt Hospital, Major W. S. Dowman.

General hospitals.—No. 4 General Hospital, Major T. R. Lucas and Major S. F. Treyer; General Hospital, Pietermaritzburg, Major A. Dodd and Major T. Browning.

Hospital trains.—Major Brazier-Creagh and Captain Leumann, Indian Medical Service.

Base Depôt Medical Stores.—Major R. J. MacCormack.

Hospital ships.—Lieutenant-Colonel F. Hodder (retired pay), Major T. P. Woodhouse, Civil Surgeon Brodie, and Civil Surgeon Hamilton.

The Volunteer Ambulance Corps, under Major H. Wright, Gordon Highlanders, have shown great devotion and gallantry, and the Indian Ambulance Corps, under Superintendent Clarence, have been most careful of the wounded—the conditions of their enlistment did not allow them to go under fire.

From Sir Charles Warren, dated, Hutlings Farm, Feb. 1st, 1900:

With regard to the medical staff, they are deserving of all praise, and I do not like to pick out of the principal medical officer's report any particular case when the reports show that all behaved so well.

From Sir Redvers Buller to the Secretary of State for War, dated Laings Nek, June 19th, 1900:—

Royal Army Medical Corps.—Major J. D. T. Recktit and Major S. R. Cree.

I have to add to these certain officers of my staff who assisted General Hildyard in every manner in their power:—

Lieutenant-Colonel W. B. Allin, Royal Army Medical Corps, principal medical officer field force, who was in charge of all the medical arrangements, which were carried out to my entire satisfaction.

Major J. D. Moir, Royal Army Medical Corps, in charge of 11th Brigade Field Hospital, did excellent work after the action at Allemann's Nek.

Captain C. B. Martin, Royal Army Medical Corps, Commanding 10th Bearer Company.

Colonel H. S. G. Miles, M.V.O., chief of the staff.

Lieutenant-Colonel O. Todd, Royal Army Medical Corps, senior medical officer, 5th Division of General Hildyard's staff.

From Sir Redvers Buller to Lord Roberts, Nov. 9th, 1900:—

Medical Department.

Colonel T. J. Gallwey, M.D., C.B., has been principal medical officer of the Natal Field Force throughout. I believe that he has succeeded in maintaining on the lines of communication and at the front a higher standard of comfort in general, stationary, and field hospitals, and a better service in bearer companies than has ever before been attained with a force in the field. His unbounded energy and his unrivalled powers of organisation have aided him in this work, but beyond this he has shown a devotion to his work, a grasp of the situation, and a capacity of forethought that justifies me in saying that I consider his services eminently deserving of the highest consideration that can be given to them.

Colonel J. A. Clery, M.B., principal medical officer of the lines of communication is an officer of sound judgment, common sense, and high administrative power. In his hands the hospital at Mooi river became remarkable as a model of what a hospital should be, and since that he has done most valuable service in supervising the hospitals and medical work along the lines of communication in Natal. I trust his services may be rewarded.

Lieutenant-Colonel P. H. Johnston, M.D., did admirable work at a time of great pressure at the commencement of the campaign, showing much foresight and good powers of organisation.

The following medical officers deserve mention for the excellent duties they performed in connexion with general and stationary hospitals; Lieutenant-Colonel J. G. MacNeece, No. 7 General Hospital; Lieutenant-Colonel H. Martin, M.B., No. 14 General Hospital; Major T. R. Lucas, M.B., secretary and registrar, No. 4 General Hospital; Major F. A. B. Daly, M.B., No. 1 Stationary Hospital; Major H. H. Johnston, M.D., Mooi River General Hospital. Major G. W. Brazier-Creagh, excellent service with ambulance train; Major S. Westcott; Major R. J. McCormack, M.D., Base Depôt, Medical Stores; Lieutenant and Quarter-Master G. H. Painton, No. 4 General Hospital; and Lieutenant and Quarter-Master F. W. Hall, Howick General Hospital.

With the lines of communication such a great length the number of warrant and non-commissioned officers of the Royal Army Medical Corps who have in different places performed work that was locally considered worthy of special mention is naturally very large, and the same remark applies to the Militia and Volunteer Medical Staff Corps and St. John's Ambulance Brigade, to the army nursing sisters, to the *personnel* of the Indian Medical Service (who were attached), to the men of the Imperial Irregular Corps and the Natal Volunteers, to the large number of civil surgeons engaged in England and locally, and to the colonial nurses engaged locally, and from colonies over sea. I am quite unable to make a selection of the names that have been forwarded to me, and have forwarded the list to the Director-General, Army Medical Service, begging him to obtain, later, your permission to publish such names as he may think desirable, but I wish to record here my thanks to all the members of those organisations.

In dealing with the medical service of the lines of communication, I should fail in my duty if I did not express the gratitude of the whole force to the following: H.R.H. Princess Christian of Schleswig-Holstein for the gift of a hospital train, which has been the greatest blessing to our sick and wounded; the Red Cross Society, under Sir J. Furley; the Durban Women's Patriotic League; the Army Hospital Aid, Pietermaritzburg; Mr. A. Mosely for his munificent donation of the Princess Christian Hospital, Pinetown; Mr. F. Stevens, who gave the use of his house and grounds for the Princess Christian Hospital; Mr. Coope, who gave his yacht *Suarise* for the use of sick and wounded officers; and Sir Samuel Scott who similarly took sick and wounded officers on board the *Golden Eagle*. These cases stand out, but there were many other instances too numerous to mention in which private individuals generously contributed to alleviate the sufferings of the sick and wounded, and in the name of the Natal Field Force I express our most grateful thanks to all of them.

Lieutenant-Colonel S. H. Carter, M.B., Royal Army Medical Corps, principal medical officer, 4th Infantry Division, has discharged his duties to my entire satisfaction.

Lieutenant-Colonel R. L. Love, M.D., Royal Army Medical Corps, and Major O. R. A. Julian, Royal Army Medical Corps, deserve mention for the manner they respectively looked after the 8th Infantry Brigade Field Hospital and Brigade Bearer Company.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Staff Surgeons: R. Miller to the *Eagle*, temporary; G. Wilson to the *Arrogant*; H. F. Illewicz to the *Cambrian*; H. W. A. Burke to the *Pembroke*; J. L. Barrington to the *Mars*; and R. H. J. Browne to the *Alacrity*, on promotion. Surgeons: C. R. Nicholson to the *Cambrian*; W. P. Dyer to the *Nile*; E. A. Shaw to the *Medea*; A. F. Fraser to the *Resolution*; H. B. Hall to Yarmouth Hospital; E. Grazebrook to Hong-Kong Hospital; and H. H. Gill to the *Impregnable*.

VOLUNTEER CORPS.

The undermentioned Supernumerary Officers are absorbed into the Establishment of their respective Volunteer Corps on the disbandment of the City of London Imperial Volunteers, with effect from Dec. 1st, 1900, viz.:—*Artillery*: 2nd Middlesex: Surgeon-Captain A. Thorne. *Rifle*: 16th Middlesex (London Irish): Surgeon-Captain E. W. St. V. Ryan. 20th Middlesex (Artists'): Surgeon-Captain R. R. Sleman. *Royal Engineers*: Submarine Miners: The Forth Division: Neish Park Watt to be Surgeon-Lieutenant. *Rifle*: 4th Volunteer Battalion the South Wales Borderers: Surgeon-Lieutenant H. C. Groves resigns his commission. 1st (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Captain T. Philip to be Surgeon-Major.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major S. P. Smith, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve of Officers. Surgeon-Major D. E. Flinn to be Surgeon-Lieutenant-Colonel.

AN EXPERIENCE OF ANTI-TYPHOID INOCULATION.

The January number of the *Medical Chronicle* contains an article, 28 pages in length, entitled, "Six Months with a Military Hospital in South Africa," written by Mr. J. W. Smith of Manchester, lately in charge of the surgical division, No. 9 General Hospital, South African Field Force. In the beginning of February, 1900, the Manchester detachment of the Medical Staff Corps was enrolled in the Royal Army Medical Corps and transported to Aldershot, and Mr. Smith, having been gazetted to a temporary commission in the Royal Army Medical Corps, was detailed to the staff of No. 9 General Hospital and sailed for South Africa early in March. The staff of No. 9 General Hospital consisted of 20 medical officers, of whom 13 were civilian surgeons and seven belonged to the Royal Army Medical Corps, including one officer from the London Volunteer Medical Staff Corps and Mr. Smith himself. The following is his description of what must have been the principal medical event of the voyage:—

On the voyage out we all underwent the process of anti-typhoid inoculation. This is by no means a pleasant experience. Thirty of us were done one afternoon, the dose, which consists of a sterile culture of the typhoid bacillus, being injected under the skin of the flank. Within two hours we were all prostrate. The effects came on suddenly, so much so that several men fainted, whilst some vomited, and the majority had a well-marked rigor. The effects are pretty severe for two days and then pass rapidly away. On the second day there is a plaque of effusion as large as the hand round the point of puncture, the skin very red with much subcutaneous effusion and œdema, and red lines of lymphatics running upwards towards the axilla and downwards to the inguinal glands, which are swollen and tender. At this stage walking is by no means a pleasure, and the erect posture quite out of the question. Some had slighter local disturbance, and in them the constitutional symptoms were usually more severe. Personally, I had a severe rigor lasting for over an hour and a high temperature all night. Next afternoon another slight rigor, the temperature rising to over 101°, and on the third afternoon only a slight rise of temperature. No one demanded a second inoculation, which is strongly recommended to secure immunity lasting for some time. It is impossible to speak of the success of this anti-typhoid inoculation until the statistics of the war have been published. Professor Wright has already published them with respect to the Ladysmith garrison. In Ladysmith there were in round numbers 10,500 not inoculated, and 1700 inoculated. Of the non-inoculated one in seven took enteric, of the inoculated one in 48; the proportion of deaths amongst those attacked was very nearly the same in the two groups. The general impression amongst the medical officers in our hospital was that a single inoculation probably did not confer an immunity lasting very long—the length of time differing in individuals; and also that there was a tendency in the cases of enteric in inoculated patients to abort at the end of 10 or 14 days. I should say, however, that a very considerable number of our detachment who had been inoculated suffered from enteric, of whom four at least died. Of the medical staff the only member of the junior staff who had not been inoculated died of enteric.

SOUTH AFRICAN NOTES.

Civil Surgeon Kellage was slightly wounded in the railway action near Vlakfontein on Feb. 6th.

A telegram from Krugersdorp, dated Feb. 2nd, states that at an outpost engagement at Modderfontein on Jan. 31st Dr. Walker, who was among the killed, had received three

bullet wounds, but was finally despatched by a Boer, who battered in his skull with a stone.

The following have been discharged from hospital to duty:—Captain F. Smith, R.A.M.C., Civil Surgeons H. C. Adams, W. J. Moir, Brincker, H. Brown, and P. Stewart (Jan. 27th). Major W. L. Gray, R.A.M.C., Major G. E. Hale, R.A.M.C., and Major R. G. Hanley, R.A.M.C. (Feb. 3rd).

Civil Surgeon John Ironside Bruce is reported dangerously ill at Newcastle from enteric fever on Feb. 7th.

DEATHS IN THE SERVICES.

Surgeon General Stephen Chapman Townsend, C.B., I.M.S., at Exeter on Feb. 9th, aged 75 years. The deceased entered the Indian Medical Service in 1852, and was engaged in the Burmah campaign of 1852–3 (medal). He was appointed principal medical officer of the Kuran field force in 1878 during the Afghan war, and was chief of the medical staff under General Roberts in the Cabul expedition of 1879. He was severely wounded in the advance through the Shutagardar Pass whilst talking to General Roberts. From 1868 to 1878 the deceased was civil sanitary commissioner in the Chitral Provinces and was appointed surgeon-general of the Punjab in 1880. On his retirement he received the C.B.

REVACCINATION IN THE ROYAL NAVY.

News was received at Plymouth on Feb. 5th that H.M.S. *Blenheim* had arrived at Port Said from Gibraltar *en route* for China. On the voyage the whole of the ship's company and the majority of the officers had been revaccinated. This is in accordance with an Admiralty order for ships proceeding to the China station.

Inspector-General of Hospitals and Fleets Henry Charles Woods has been promoted to a Commandership of his order.

Correspondence.

"Audi alteram partem."

"THE SURGERY OF PREGNANCY AND LABOUR COMPLICATED WITH TUMOURS."

To the Editors of THE LANCET.

SIRS,—In his lecture published in THE LANCET of Feb. 9th, p. 382, Mr. J. Bland-Sutton says: "Some accoucheurs recommend in cases where a cyst obstructs the transit of the child that it should be emptied through a vaginal puncture (Herman)." I take it that anyone reading this would think that I advised tapping as a routine proceeding rather than the better treatment advocated by Mr. Bland-Sutton. This is not an opinion that I hold or have expressed. I therefore asked Mr. Bland-Sutton to correct this misrepresentation. I have received from him the following reply:—

48, Queen Anne-street, Cavendish-square, W.,
Feb. 11th, 1901.

DEAR HERMAN,—Being so often misrepresented myself, I always endeavour to present other men's views carefully and justly. I gathered your views on this matter from the Trans. Obstet. Society, vol. xl., p. 8. I have re-read them and find that you do recommend the practice as stated in my lecture and I fail to find any misrepresentation. I added your name because as a known teacher of obstetrics at a London hospital it gave sanction to the method when adopted by a practitioner not skilled in operative surgery. You will, if you read carefully, find in the lecture that I particularly criticise palliative measures instead of placing the patient in skilled surroundings.

Yours sincerely,
J. BLAND-SUTTON.

P.S.—If you make any public reference to this matter also kindly include this letter.—J. B.-S.

I find in the remarks to which Mr. Bland-Sutton refers no recommendation of tapping, unless it be inferred from a general expression of agreement with the paper under discussion. (In this paper tapping is discussed so fully and impartially that I think it would be unjust to the author to say that he recommends tapping.) On the contrary, I pointed out the dangers of tapping, I advised that in circumstances which did not permit ovariotomy the cyst should be incised and stitched to the vagina, and I said that this should not be done when ovariotomy could be performed.

I would ask those of your readers whom this small question may interest to read the remarks referred to by Mr. Bland-Sutton, and judge how far his representation of them is a fair one.

I am, Sirs, yours faithfully,
Feb. 14th, 1901. G. E. HERMAN.

"DIPHTHERITIC PARALYSIS."

To the Editors of THE LANCET.

SIRS,—The interesting case reported by Dr. Rice Oxley in THE LANCET of Feb 2nd, p. 321, is a good instance of how an attack of diphtheria attended by very mild symptoms may be followed by paralysis. Such cases are not particularly rare and have given rise to the notion that the frequency of paralysis bears no relation to the severity of the initial attack of diphtheria. Thus Gowers states that paralysis "is equally likely to follow attacks that are severe as those that are trifling." This appears to have been the general opinion, especially before the antitoxin treatment was discovered, although authorities were not unanimous on the point. I cannot help thinking that to a large extent this belief was due to the fact that the severity of the attack of diphtheria was often estimated from the history given by the patient, the symptoms having been so slight that no medical man had been consulted. In other words, the feelings of the patient and not the extent of the anatomical lesion—the symptoms and not the signs—were taken as the criterion of severity. It is a commonplace observation that membrane extensive enough to cover a large part of the tonsils may exist with only the very slightest malaise. Indeed, in some cases the patient may be unaware that the throat is the seat of the mischief. He may consider himself to be only slightly out of sorts, though in reality his attack is of quite average severity. Such cases are frequently met with among the staff of a fever hospital, so that the only safe rule is never to omit an examination of the throat, whatever may be the symptoms for which the patient seeks advice. In the following table, taken from a paper in the Metropolitan Asylums Board's report for 1898, I have classified 829 consecutive cases of diphtheria uncomplicated by any other infectious disease. The classification depends entirely on the amount of the local lesions, no account being taken of merely subjective symptoms.

Nature of case.	Total cases.	Cases of paralysis.	Percentage of paralysis.	Cases of severe paralysis.	Deaths from paralysis.
Severe ...	223	64	28·6	19	5
Moderate ...	566	75	13·2	7	1
Mild	40	—	—	—	—

The first group comprises cases with extensive faucial membrane with swelling of the glands and rhinorrhœa. In the group of mild cases the faucial lesion was slight, the diagnosis depending chiefly on the history of exposure to infection, confirmed in every case by bacteriological methods. The intermediate group contained cases with a moderate amount of membrane, and many of them, if classified according to the symptoms complained of, would have been considered very mild. Of the "severe" group, 128 patients died before paralysis had had time to develop. Out of the 95 survivors 64, or 67·4 per cent., became paralysed.

From the above table the following conclusions may be drawn: (1) severe attacks of diphtheria are especially liable to be followed by paralysis, often of a severe character; (2) in less severe attacks paralysis is less frequent; and (3) in mild attacks paralysis is improbable. Of course, I do not mean to deny that even the mildest attack may be complicated by paralysis, merely asserting that such an event is relatively infrequent. Two sources of fallacy are obvious: (1) that all exudation may have cleared up before the case comes under treatment; and (2) that membrane, though present, may not be visible by the ordinary method of examination. Making every allowance for possible errors, it is justifiable to conclude that the severity of an attack has a very definite relation to the frequency and character of the subsequent paralysis. Besides the amount of membranous exudation indications of the severity of diphtheria are found in the urine, the blood, and the heart. Albuminuria, anæmia, and disturbance of the heart's action are most marked in the severe cases, and each one of these signs serves as a warning of the possible approach of paralysis. In hospital work we have long been accustomed to estimate on

these lines the likelihood of paralysis supervening, and very useful help in treatment is thus obtained. It should be mentioned that all the cases in the above table were treated with antitoxin. In pre-antitoxic years I believe the rule just stated still holds good, though the problem is complicated by the fact that no treatment was available for preventing a mild case from becoming severe; and severe cases usually died. At the same time the diagnosis was less accurate than at present, bacteriological methods not being used. As patients who survived a severe attack were not numerous, a few cases of paralysis occurring among them would represent a high percentage. Thus, in the table I have given less than half the total paralysis was associated with severe attacks of diphtheria, though in consequence of the comparatively small number of such cases the percentage of paralysis is decidedly high. In patients at the present time admitted to hospital, and in consequence of the mildness of the disease not treated with antitoxin, paralysis is, I believe, very unusual. After all, this is only what one would expect, since with surfaces of equal absorptive power the absorption of toxins would vary directly with the extent of the membrane.

I am, Sirs, yours faithfully,

F. J. WOOLLACOTT.

Eastern Hospital, Homerton, N.E., Feb. 3rd, 1901.

THE EXCISION OF HÆMORRHOIDS.

To the Editors of THE LANCET.

SIRS,—I was glad to read your criticism of a recent publication on "Diseases of the Anus and Rectum" in THE LANCET of Jan. 26th, p. 261, in which you very justly comment on the two authors who condemn the removal of hæmorrhoids by excision. These two authors state that their objections to the operation by excision are "that it leads to a severe loss of blood, is tardy in healing, and is liable to cause ultimate contraction of the lower part of the rectum." I very much appreciate your remarks when you reply that "all these objections are imaginary and none of these evils result when operations are carefully performed."

My experience of excision, which now covers a vast number of cases and extends during a period of 25 years, has completely convinced me that when the operation is performed as directed, and the common intelligent principles of general surgery are observed there is no excessive hæmorrhage, and I can absolutely deny that the slightest contraction of the lower bowel ever can or ever does take place. Unless some of the skin at the verge of the anus is sacrificed—which would be a distinct violation of the instructions given for excision—no stricture of the anus ever results. Contraction depends entirely upon the removal of skin, and the contraction bears almost an exact relation to the amount of skin removed. Cutting away the small tabs just outside the anus is one of the treacherous snares which is common to all operations for hæmorrhoids and ought only to be resorted to with the greatest caution and consideration. As to convalescence I am positive that it is not only quicker but far more perfect than that following any other operation for the removal of hæmorrhoids.

I cannot understand how the authors referred to can consider themselves entitled to express their opinions on the merits of excision when they so naïvely boast that they never employ any other method than that of the antiquated ligature. The patients I operate upon by excision invariably have an action of the bowels on the fifth day and after that event they are at liberty to return home on the day following, and more frequently than not they are quite equal to resume their ordinary avocation within a fortnight. The ligature as applied to hæmorrhoids is after all only a relic of the principles which dominated mediæval surgery and cannot compare in rapidity of cure with excision. I may go further and assert that I have never after excision met with a single one of those numerous complications which other authors allege follow the use of the ligature. As a matter of fact, it was the tedium of recovery after using the ligature which originally induced me to abandon that practice for excision. What surgeon at the present day ligatures an artery when he can employ torsion? Early in my surgical career I recognised the absurdity and inconsistency of devising special and exceptional methods for removing a simple pathological condition like hæmorrhoids instead of treating them by the ordinary and rational rules of general surgery.

I am, Sirs, yours faithfully,

Manchester, Feb. 5th, 1901. WALTER WHITEHEAD.

"GASTRIC HÆMORRHAGE AND ITS SURGICAL TREATMENT."

To the Editors of THE LANCET.

SIRS,—I have read with interest Mr. Robson's address on the above subject published in THE LANCET of Feb. 9th, p. 375. I think that many will agree with me that by including stomach cases in which chronic hæmatemesis happened to be one of the symptoms before or at the time of operation he puts the surgery of gastric hæmorrhage in an unduly favourable light. "Chronic" hæmatemesis, by which we mean coffee-ground vomiting, is, after all, only one of the symptoms of a disease which may or may not require surgical relief. It seems to me that there should be a very clear distinction made between operations on stomach cases in which chronic hæmatemesis is one of the symptoms and operations undertaken to save a patient's life during an attack of gastric hæmorrhage—acute hæmatemesis—which threatens to be fatal. The question at present vexing the minds of the profession is, Given a profuse and oft-recurring hæmorrhage from the stomach which is threatening life, are we justified in operating or should we trust to medical treatment? In other words, are we to operate for hæmorrhage *per se*, apart from the pyloric obstruction and other stomach disabilities produced by ulceration?

The five cases quoted give us a wrong impression because they are not all cases operated on for gastric hæmorrhage. The first case is a pylorectomy. The chronic hæmatemesis is only an incident in the case, for the result would have been the same had it not been present. The operation was for pyloric obstruction and cannot, therefore, be reckoned as supporting the argument for the surgical treatment of gastric hæmorrhage. I may add, for I know the case well, that the symptoms of pyloric obstruction rapidly reappeared and the patient died within the year. The hæmatemesis, therefore was only an incident in the course of a fatal disease which killed by symptoms other than bleeding. The second case should certainly be excluded as the operation was not performed on the stomach. Moreover, Mr. Robson is mistaken when he says that the patient was "vomiting bright arterial blood." In his report of the case in the *British Medical Journal*, July 10th, 1897, it is only recorded that "the patient was *said* to have vomited blood immediately after the accident." Now, I personally admitted the patient into the hospital. His fellow-workman told me that he thought blood had been vomited. I therefore assumed a "wound of the stomach." At the operation there was no wound of the stomach and I was therefore interested to notice if any sign of gastric hæmorrhage appeared subsequently. None ever occurred, so that beyond the workman's statement there was no evidence whatever of gastric hæmorrhage. These two cases should therefore be excluded. In the remaining three an operation seems to have been done in order to prevent a fatal result from a recurring gastric hæmorrhage, and this is the point that I wish to emphasise—namely, that the presence of "coffee-ground" vomiting is only one of the symptoms of a disease for which surgical interference may be necessary; but what we want deciding is whether we are justified in opening the abdomen on account of the sudden occurrence or recurrence of a "gastric hæmorrhage" so profuse as to threaten life precisely on the same lines as we have been taught to expose a bleeding point in other parts of the body.

I am, Sirs, yours faithfully,

Bradford, Feb. 9th, 1901. J. BASIL HALL.

"LEGISLATION AGAINST NATIONAL INTEMPERANCE."

To the Editors of THE LANCET.

SIRS.—Your leading article in THE LANCET of Feb. 9th, p. 410, on the topic of legislation as applied to the disease of alcoholism should induce many useful thoughts in the minds of those who do not view the question from an intemperate standpoint. The facts which Dr. Carter has adduced are such as will impress the profession that this question must be viewed as one of the first importance by those who love their country. Personally I have never "signed the pledge," but have the reputation of being "strong on temperance" according to a local publican. Pardon me also if I say that I am an active organiser of

more than one branch of athletics. Being thus, perhaps, absolved from some of the prejudice which often clings around any man who feels strongly on the alcohol question, I would like to point out that for a general practitioner it is unpopular to profess a marked adherence to temperance principles. The publican's influence swings against him at once; and that, as everyone knows, means a certain loss of practice by no means small, especially if neighbouring medical men adopt a *laissez faire* attitude on the alcohol question. The fact is, that general practitioners have more reason than the "front rank" men for being shy of speaking the plain truth about alcohol. You may say to your patient without fear of offence, "You are not taking precautions about your sanitary state: your drains smell abominably"; but you will often give great offence if you say, "You are indulging too freely in alcohol: you smell badly of your continual nipping."

It is admitted that the abuse of alcohol is one of the worst evils affecting the British nation. No body of men know that better than the medical profession. Further, if the proved facts are admitted—if, for instance, it is admitted both that the habitual use of alcohol is unnecessary to most people and harmful to many, and that none of the alcoholic drinks in common use have any nutritive value whatever, surely it is time that we general practitioners should raise our voices loudly and unanimously against this national danger just as we have openly and emphatically condemned those breaches of sanitary laws which have in times past nursed the diseases of small-pox, typhus fever, or typhoid fever. At present we are not decided enough: we are not unanimous enough on the alcohol question.

I am, Sirs, yours faithfully,

Feb. 11th, 1901. A COUNTRY PRACTITIONER.

MR. VICTOR HORSLEY'S REPORT.

To the Editors of THE LANCET.

SIRS,—I have read Mr. Horsley's report to the Registered Practitioners of England and Wales with rather mingled feelings. No one can have a higher opinion than I of my friend's energy, devotion to his constituents, and desire to be accurate as to his facts. But here his facts are incorrect and his dicta in the highest degree misleading. It is as nearly as possible the opposite of the truth to say that the representatives of the friendly societies would never consent to the question of a wage-limit being discussed at the Conciliation Board. On the contrary, this was one of the questions which were expressly deferred for discussion until such a Board would be formed.

I am, Sirs, yours faithfully,

WILLIAM BRUCE,
Direct Representative for Scotland on the
Dingwall, N.B., Feb. 13th, 1901. General Medical Council.

LEGISLATION FOR THE PREVENTION OF VENEREAL DISEASE.

To the Editors of THE LANCET.

SIRS,—I should be most grateful if any of the readers of THE LANCET would supply me with information, or indicate sources of information, concerning the workings of legislation for the prevention of venereal disease both at home and abroad? Is it possible to ascertain what proportion of the troops destined for South Africa were rejected for venereal disease?

I am, Sirs, yours faithfully,

G. ARCHDALL REID.

Netherby, Victoria-road S., Southsea, Feb. 10th, 1901.

A SAD CASE.

To the Editors of THE LANCET.

SIRS,—As chaplain to the deaf and dumb at St. Saviour's Church, 419, Oxford-street, W., I have had applications for help in getting work from a gentleman whose difficulties do not really lie within the scope of our work, for the reason that the gentleman is able to hear with a tube, being only partly deaf, and is not dumb. I write to THE LANCET because X, as I will call him, passed the second examination in medicine at the Royal University of Ireland in 1884 and is now but 35 years of age. Just as he was ready for his final scarlet fever partly destroyed his hearing and ruined his career. Ever since that X has honourably maintained himself as a dispenser until lately, when through the laying on of a telephone he has had to give place to another with perfect hearing. The situation he now holds at the sum of 25*s.* weekly he must soon give up for good reasons; meanwhile he bravely holds on, rising at 4 A.M. daily to go to this work, which is a long way off. Here is an educated man of refinement, practically an abstainer, a non-smoker, one who is not a broken-down hack or shabby genteel man ruined by vice, but one who can to all outward appearances still hold his own in society and has a cheerful manner and decent coat on his back. Will someone take him on as dispenser or clerk?—in a large business there should surely be room for one who is quick and full of sense though somewhat deaf. The case is fully vouched for by the names hereunder written: the late Samuel R. Mason, B.A., M.D. Dub., ex-Master of Coombe Hospital; J. Torrens, M.D., M Ch. R.U.I., &c., late Demonstrator in Anatomy, Royal College of Surgeons in Ireland, 32, Harcourt-street, Dublin; D. M. Greig, M.B. Lond. Monkridge, Crouch-end-hill, N. (who last employed X); G. S. V. Wills, F.L.S., Westminster College of Chemistry—and by yours faithfully,

F. W. G. GILBY,
Chaplain to the Deaf.

419, Oxford-street, London, W., Feb. 11th, 1901.

"THE STATISTICS OF MORTALITY OF 1900."

To the Editors of THE LANCET.

SIRS,—Will you oblige by publishing next week the birth-rate, death-rate, zymotic death-rate, and infantile mortality figures for the 33 largest towns, the 67 next largest towns, and the rest of England and Wales for 1900?

I am, Sirs, yours faithfully,

Feb. 8th, 1901. M. O. H.

*** As we have received several inquiries from local medical officers of health for the following statistics of mortality in 1900 we have decided to publish them for the benefit of those specially interested.—ED. L.

Birth-rate—England and Wales—38·9 per 1000.

	Death-rate.		Infant mortality (per 1000 births).
	All causes.	Chief zymotic diseases.	
England and Wales	18·3	2·00	154
33 great towns	19·6	2·50	172
67 other large towns	18·1	2·25	166
England and Wales less 100 towns	17·6	1·57	138

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Strain on the Indian Medical Service.—The Murder of Captain Johnston, I.M.S.—Further Development of the Plague Epidemic in Bombay City and Western Bengal.—The Health of the British Army in India.

FOR some few years officers of the Indian Medical Service have had hard work and very little leave. The short-handedness of the service is at the bottom of the trouble, but I understand that proposals are on foot for taking in a certain number of men on nomination. In 1895 there was the Chitral campaign, which caused all leave to be stopped for many months. In 1897 there was the frontier trouble, when not only was all leave stopped but those on leave were recalled. In 1899 it was practically only possible for the accumulated leave to be taken by the seniors. Last year many men, after from 12 to 15 years' service, went on leave for the first time and were recalled later in the year. The China war caused all leave to be again stopped and every officer was recalled—several even on the point of retiring had to come out to India again. It is important to note the very large contingent sent to China—viz., 130 officers for 17,000 troops and 8000 followers. Of these, 122 belonged to the Indian Medical Service. On the other hand, there have been in Calcutta for the past few months 10 medical officers without any patients until recently to look after. The great

strain has taken commissioned officers from numerous large districts, no less than 50 having been taken from civil to military employment. It has been pertinently asked why civil surgeons were not sent to China to man the base hospitals as was done in South Africa, instead of crippling the medical service of India. These continued difficulties have, I understand, led the Government of India to advise the admission of "outside" surgeons for certain appointments.

The murder of Captain D. C. Johnston, I.M.S., was particularly revolting. The murderer, a Ghazi, lay in wait near the entrance to the bazaar at Loralai armed with a sword and dagger to kill the first European he saw. Captain Johnston was going his rounds as civil surgeon when the fanatic rushed out on him and stabbed him to death in a moment. Captain Johnston was senior medical officer at Loralai in the Quetta command. He was only 30 years of age. Several of these outrages have occurred, and it is almost invariably the custom not to be content with the punishment of the fanatics themselves, but to make the community to which they belong suffer also for the crime.

Plague shows a marked increase during the past week. For the whole of India there were 2839 deaths, compared with 2463 during the previous seven days and with 1279 during the corresponding week of last year. There were 575 deaths in the Bombay Presidency, 1863 in the Bengal Presidency, 37 in the Madras Presidency, 23 in the Punjab, and 341 in the Mysore province. In Calcutta there were 78 cases with 76 deaths, including 34 returned under the head of "suspicious." In Bombay city there were 293 deaths from plague—a considerable increase over the previous week. In western Bengal plague continues steadily to increase. There were 1014 deaths in Patna district, 181 in Monghyr, 357 in Saran, and 230 in the Gya district. A slight recrudescence is reported in the Punjab and in the Kolar gold-fields it continues to increase. Bombay city had a mortality of 1119, equal to a rate of 68·97 per 1000 per annum. Of this number 222 were returned as due to plague, being an increase of 68. There is no doubt that the fifth outbreak is now developing and the disease is fairly distributed over the city. The disease shows the same virulence and lately several dead bodies have been found in the public roads.

The retirement is notified of Lieutenant-Colonel G. M. J. Giles, who will be especially remembered in connexion with his investigation of kala azar in Assam, his scientific researches on the subject of the deep sea fauna of the Bay of Bengal, and more recently with his work on mosquitoes.

Cases of Malta fever continue to be proved in the north-western districts of India. Cases of cerebro-spinal meningitis have been occurring for some months past in the city of Calcutta. It is probable that many of the rapidly fatal cases diagnosed as due to cerebro-spinal meningitis were in reality due to plague. With the exception of those officers engaged on the plague staff very few medical men in Calcutta have had any experience of plague, and it is only the later cases of cerebro-spinal meningitis which can be said to have been proved as due to that disease. This view of the history of this outbreak is supported by the fact that some of the early cases were recognised by an officer of the plague staff as due to plague.

It is satisfactory to learn from the latest blue-book that the health of the European army in India has much improved since 1898 There has been a diminution of disease under almost every head. Venereal diseases still continue to cause the largest number of admissions to hospital. It is interesting to note that in Bengal heatstroke, phthisis, and dysentery were more common than in the other commands; that in the Punjab enteric fever had the greatest prevalence; and that in Madras hepatic derangements were the most noteworthy. The mounted arm of the service appears to have the most sickness and the infantry the least. There was only one death from cholera. This is a record. Also only one death occurred from small-pox. In view of the large amount of malaria at Dum Dum and Barrackpore it is a question whether these places should not cease to be kept for military stations. There was a great decrease in 1899 both in the number of cases of enteric fever and in the mortality. The admission ratio fell from 36·9 to 20·6, and the death ratio from 10·17 to 5·14. Perhaps this is explained by the much smaller influx of drafts from England and that there was no field service. There were 1392 admissions and 348 deaths from enteric fever alone making 213 men constantly sick and a loss of service of 77,818 days. The results of inoculation for enteric fever, have not been decisive, but the figures show that the percentage of enteric fever among the inoculated was 20·45 per cent. as compared with 22·22 per cent. among the uninoculated of the same corps and with 25·14 per cent. in the army as a whole. As in former years it is proved that the ages between 20 and 25 are the most vulnerable and also the first year of residence in India. Seven cases of plague with two deaths were reported. In the whole army of India 2142 men were invalided, being 31·64 per 1000 of strength as compared with 38·09 in the preceding year. This result seems chiefly due to the smaller number of men invalided for ague.

Jan. 17th.

Further Development of the Plague Epidemic.—Native Expressions of Sorrow at the Death of the Queen-Empress.

Again this week there is an increase in the plague mortality. For the whole of India 3277 deaths are recorded, as against 2839 during the previous seven days. The increase is chiefly in Bengal and Bombay city. For the Bengal Presidency there were 2181 deaths, of which Patna recorded 1236 and Saran 559. In Bombay city there were 370 deaths from plague, while the general mortality rose from 1192 to 1337. In the Madras Presidency there were 35 deaths and in the Punjab also 35. In Calcutta 73 deaths were recorded. The mortality in this city continues to be much higher than it was last year, although at present there is not apparently more plague, the exceptionally cold weather of the present season, together with an outbreak of small-pox, probably accounting for the greater part of this increase.

It is gratifying to hear that the expressions of regret and sorrow for the death of the Queen-Empress are universal. From the different communities of the natives have been sent messages of profound sorrow, and the greatest respect has been shown by all classes. One hears from time to time all sorts of talk about the decline of the British power; but under the mournful circumstances of the Queen's loss every section of the people gives utterance to its grief. One native paper expresses the general feeling admirably: "She had the tenderest regard for her Indian children and the people of India gave her a mother's affection. We mourn for her as we do for our dearest parent."

Jan. 24th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Salicylic Acid in Fruit Wines: Prosecution by the Health Committee.

Messrs. R. Paterson and Son were summoned under the Food and Drugs Act at the instance of the Health Committee, for selling ginger wine to which was added salicylic acid in the proportion of 13 grains to the pint and raspberry wine which contained 19½ grains of the same drug to the pint. Professor R. W. Boyce, for the prosecution, stated that he had fed a kitten exclusively on milk containing salicylic acid in the proportion in which it was found in the wine, and the kitten lost weight and died. In cross-examination he admitted that the kitten did not take much of the milk, which it appears was curdled by the acid. Mr. F. T. Paul stated that in his experience salicylic acid in full doses was apt to be attended by serious symptoms. Dr. A. S. F. Grünbaum, assistant lecturer on physiological chemistry at University College, Liverpool, stated that salicylic acid increased the action of the kidneys and led to an increase of uric acid—"the substance which forms stone." Asked whether the mucous membrane of the stomach or of the eye was the more sensitive to irritation, he said that there was no mucous membrane of the eye. For the defence Dr. C. J. Macalister and Mr. T. H. Bickerton said that they had taken the wines freely and given them to their households and that no evil results had been observed. Dr. T. R. Bradshaw had taken five grains of salicylic acid daily for a considerable period without any unpleasant effects whatever. The wine was meant to be drunk largely diluted with water, and he was confident that the presence of salicylic acid in the proportions stated was no contra-indication to its use. Counsel for the defence explained that the wines in question, being made from fresh fruit and free from alcohol, could not be made with a smaller proportion of antiseptic, owing to the tendency of the juices to ferment.

The stipendiary dismissed the case. This is the second time these manufacturers have been prosecuted within the last few months; last October the case was also dismissed by Mr. Kinghorn, the deputy stipendiary magistrate

The Dangers of Overhead Electrical Wires.

During a snowstorm last week a bunch of telephone wires, becoming overweighted with snow, fell across the overhead electrical wires in connexion with the tramway system now so general throughout the city. The telephone wires, which immediately became charged with electricity, came in contact with a number of pedestrians, causing them severe electric shocks. Many people became entangled in the wires and writhed about in an agony of convulsions for a long time before they could be extricated. Unfortunately two men were found to be dead upon removal to the hospital, whilst 20 or more individuals were taken to the Royal Infirmary and were found to be suffering from severe injuries, such as burns and extensive lacerations of the integuments, besides injuries to the nervous system caused by shock. An inquiry into the circumstances attending the two deaths is being held by the city coroner. It is sincerely to be desired that the responsibility for the lamentable occurrences may be placed upon the proper shoulders. The introduction of the electric cars into Liverpool has already been attended by many disasters. The proximity of telephone wires to the trolley wires, which are charged with a high voltage, is a danger to life which should not be tolerated, and it is time for the public to demand that some degree of safety in the neighbourhood of the electric tramway lines be assured to them.

The Royal Infirmary; Annual Meeting; the Vacant Honorary Physicianc

The annual meeting was held on Jan. 30th at the boardroom of the infirmary. The Lord Mayor and the Bishop of Liverpool were specially invited to attend. The bishop, in proposing a vote of thanks to the honorary physicians and surgeons, alluded to Dr. T. R. Glynn's long services to the hospital, which he eulogised in flattering terms His lordship said that, as one connected with the medical profession all his life, he thought he was justified in saying that the part of the work which a doctor liked best was his hospital work. Work which was thus well loved was sure to be well done, and not only was it well done but it was done at the cost of great self-sacrifice. His lordship concluded a sympathetic speech by proposing the appointment of Dr. Glynn as consulting physician, which was unanimously carried. The bishop also alluded to the generosity of Mr. George Melly, a member of the committee, who had provided the installation of the electric light in the wards and corridors at his own cost. It is expected that Dr. T. R. Bradshaw, the senior assistant physician, will have an unopposed election. It is generally recognised that Dr. Bradshaw has earned his promotion to the higher post of honorary physician.

The Royal Southern Hospital.

At the annual meeting of the subscribers to the Royal Southern Hospital on Feb. 11th, the treasurer's statement showed a very unsatisfactory state of things. The debit balance, which at the end of 1899 was £4140, had now increased to £7170. The president made an earnest appeal for funds to support the only general hospital at the south end of the city. During the course of the meeting Mr. Alfred L. Jones intimated that his firm (Elder, Dempster, and Co.) would increase their subscription to £50 a year and also give a donation of £500 towards the reduction of the debt. It also transpired that a further donation of £500 had been received from Mr. F. J. Harrison. Alderman Paull also promised to double his subscription and he appealed to others to do the same. There is now every prospect of a large reduction of the hospital debt, if not its total liquidation, by the assistance which, in due time, it will receive from the proportion of the Lord Mayor's hospital century fund, which is progressing satisfactorily, more than half the amount asked for by the Lord Mayor having been already subscribed. The annual dinner, which had been arranged for Feb. 12th, in conjunction with the Liverpool School of Tropical Medicine, and which the Duke of Northumberland, the Earl of Derby, Professor Ray Lankester, and others had promised to attend, will not take place owing to the national mourning and the death in Brazil of Dr. Walter Myers.

Another Disruption at the Cancer and Skin Hospital.

The income of this charity does not appear to be altogether satisfactory. The treasurer's report states that there is a credit balance of £196 16*s.* 1*d.* as against a debit balance of £217 on Dec. 31st, 1899. This apparently satisfactory result had, however, only been arrived at by the expenditure of capital. Legacies and donations, instead of being invested, have had to be used as current income. An undercurrent of feeling appears to exist in the management of the charity in spite of the lessons of former troubles. Colonel Pilkington, the chairman of the hospital committee (one of the new members elected since the resignation of the old committee, which has already been recorded in THE LANCET),[1] was opposed by a clique at the annual meeting held on Feb. 11th and was defeated by a small majority. Colonel Pilkington accepted a seat on the committee at a time when it was difficult to get anyone to serve. In the words of Mr. A. T. Miller, a member of the committee, "he had endeavoured to do his duty and had had to thwart the designs and ambitions of some people." Truly the charity is still in troubled waters. Will this latter evidence of discord encourage the Hospital Sunday and Saturday Committee to restore to the hospital the grant which under pressure of public opinion was withdrawn a year ago?

Feb. 12th.

WALES AND WESTERN COUNTIES

(FROM OUR OWN CORRESPONDENTS.)

Plague in Cardiff.

THE suspicion that the man who died from plague at Cardiff on Jan. 31st was infected by a plague-stricken rat has been verified by Dr. W. G. Savage who has reported that in one rat which he examined plague bacilli were found to be present in large numbers. The corporation has announced by public advertisement that the sum of 4*d.* will be paid for every rat guaranteed to have been caught within the borough or port sanitary district and delivered at the corporation depôt. There are three official rat-catchers in the employment of the corporation and this number has been temporarily increased to six. The practical utility of the Cardiff and County Public Health Laboratory is emphasised by Dr. E. Walford in his report for the last quarter of 1900 when he states that in connexion with the October case of plague the facilities offered by the laboratory enabled a provisional diagnosis to be given 18 hours after the patient was seen by the bacteriologist. Upon a subsequent page of the same report we are told that the cook of a steamship was removed on Dec. 31st, 1900, to hospital presenting symptoms of plague with inguinal and axillary glands on both sides of the body slightly enlarged and inflamed. Some blood and exudation from the glands were taken for bacteriological examination, the results of which were completely negative, and the case was treated as one of septicæmia.

Insanitary Houses in Cardiff.

Although Cardiff is one of the oldest towns in the kingdom it did not increase in size to any very considerable extent until the latter half of last century. In 1881 the population was about 80,000 and it is now estimated at 200,000. One is not surprised, therefore, to find in a report of the medical officer of health presented to the Health Committee on Feb. 4th that there are in the town comparatively few slums or courts. The report, which is apparently made in compliance with sec. 32 of the Housing of the Working Classes Act, 1890, refers to 134 houses in different parts of the town containing an aggregate of 331 rooms and with a total population at the time of inspection of 395 persons. Dr. Walford represents that 129 of these houses in 28 groups are unfit for human habitation and the committee adopted his suggestion that they should be dealt with in accordance with the provisions of sec. 32 of the Act of 1890. The report does not state when the houses in question were erected—an omission which is to be regretted in view of the fact that until quite recently the building by-laws in force in the borough were not by any means based upon the most approved lines.

Remuneration of Colliery Surgeons.

It has been well known that the colliers in South Wales have been earning during the past year unusually good wages—10*s.* a day is said to be the average—and at the Merthyr County Court last week it was proved that several

[1] THE LANCET, August 5th (p. 366) and 19th (p. 515), 1899.

defaulting debtors were colliers earning considerably more than this sum. It is gratifying to know that those colliery surgeons who are paid by a poundage—usually 3*d* in the pound—upon the men's earnings have now an opportunity of recouping themselves for the losses which they sustained during the recent five months' strike, when many of them received no payment at all although there was no diminution in the attendance upon the colliers and their families.

Remuneration of Medical Officers of Health.

Judging from several recent instances the Local Government Board seem to have decided that the minimum salary of a medical officer of health who devotes his whole time to the service shall be £500 per annum. The Merthyr Urban District Council, the medical officer of health having recently resigned, propose to pay his successor a salary of £400 per annum, rising by annual increments of £25 to £500 per annum. The Local Government Board do not refuse their sanction to this salary, but will not agree to the requirement that the officer appointed shall devote his whole time to the duties, until the salary shall have reached £500. The appointment will be for a period of five years and will be made on March 6th next. There is no town in South Wales which requires more vigorous sanitary administration than Merthyr, and it is a great pity that the Local Government Board cannot get the district council to appreciate the full extent of their responsibilities.

Liabilities of Medical Officers of Friendly Societies.

A case of considerable importance to the surgeons of friendly societies was heard before Judge Owen at the Barry County Court on Feb. 5th. A member of the Barry lodge of the Ancient Order of Foresters who was suffering from pleurisy was attended on Nov. 20th, 1900, by Mr. P. J. O'Donnell, the surgeon to the lodge, who when he called at the man's house on the following day found the door locked and was unable to gain admittance. Later in the day and during surgery hours the patient's wife asked Mr. O'Donnell to visit her husband the same evening. He replied that as he had seen the man the previous day and had already called at the house once that day he could not see him again until the following morning. The woman thereupon called upon another medical man to attend her husband and his fees, amounting to 21*s.*, were sued for in the county court. A special meeting of the lodge had been held to inquire into the circumstances of the case, and Mr. O'Donnell had been exonerated by the members from all blame in the matter. The county court judge, however, held that he should have attended when asked to do so by the patient's wife, and gave judgment in the man's favour.

Small-pox at Barry.

Upon the arrival at Barry of a Spanish steamer from Barrow-in-Furness, on Feb. 6th, it was found that three members of the crew were suffering from small pox. They had been vaccinated, together with the remainder of the crew, at Barrow a few days before owing to the occurrence of a fatal case of small-pox among the sailors on board. A fourth case was found on Feb. 9th on a steamship which had left Cardiff on the day before. The Barry Urban District Council have had plans prepared and have even received tenders for a small-pox hospital, but in consequence of the opposition of some of the townspeople the erection of the buildings has been indefinitely postponed. Fortunately, however, the town possesses a very well-appointed hospital for the isolation of infectious diseases other than small-pox and the medical officer of health (Mr. George Neale) has very properly refused to allow it to be occupied in view of a contingency such as the present arising. His forethought is now fully justified, for the four men in question were promptly removed to this institution. It is to be hoped that the opponents of the council will now withdraw their opposition, which they must see is most ill-advised and not at all conducive to the best interests of the town.

Newport Medical Society.

An ordinary meeting of the members of this society was held on Jan. 30th, Mr. Walter Basset, the president, being in the chair.—The honorary secretary (Dr. J. Howard-Jones) was instructed to enter upon the minutes of the meeting the profound regret of the society at the death of the Queen.—Mr. A. Falconer Hayden exhibited a case of Sarcoma of the Humerus of large size and very rapid growth in a girl of 17 years, and Dr. A. Garrod Thomas brought before the members a case of Infantile Paralysis affecting Muscles around the Shoulder Joint. Curiously enough both patients had in the first instance been treated by bone-setters for injuries.—Mr. J. Lynn Thomas and Dr. A. William Sheen, two members of the society who have recently returned from South Africa, gave some details of their experiences, Mr. Thomas with the Welsh Hospital and Dr. Sheen with the Langman Field Hospital Limelight views taken by both the speakers were thrown upon the screen, and they included two photographs of the Dutch commander De Wet which had been taken by Dr. Sheen. From the remarks that were made it was evident that the Welsh Hospital and the Yeomanry Field Hospitals were thoroughly efficient.

South Devon and East Cornwall Hospital.

The annual meeting of the subscribers of this institution was held at Plymouth on Feb. 8th. The medical report stated that during 1900 the in patients numbered 1282, an increase of 38 compared with 1899. There were also 2654 out-patients treated against 2650 in the previous year. 287 patients had been sent to the Pearn Convalescent Home, against 253 in 1899. The financial statement showed that the income amounted to £6492 and the expenditure to £6755. During the past year a donation of £2000 had been received from Mrs. F. Cubitt, and in December last the trustees of the late Mrs. E. S. Hains sent £21,000 to form a fund to be called the "Elizabeth Hay Fund."

Clifton Dispensary.

The eighty-eighth meeting of the subscribers of the Clifton Dispensary was held on Feb. 5th under the presidency of the Rev. G. Hemming. The medical report stated that 3451 patients had been treated during 1900, including 73 cases of midwifery, as compared with 4203 in 1899. The financial statement showed that there was a favourable balance of £127. 20 patients had been sent to the Jubilee Convalescent Home at Clifton.

Feb. 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Edinburgh.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Feb. 5th, Dr. Fraser, the President, being in the chair. At the commencement of the proceedings it was unanimously resolved that the College present to His Majesty King Edward VII. an address of condolence on the death of Her Majesty Queen Victoria and of congratulation on His Majesty's accession to the throne.

Dr. R. M. Ronaldson was introduced and took his seat as a Fellow of the College. Mr. Tom Henry Trevethan Frampton was admitted by ballot to the Fellowship of the College. On a ballot the following candidates were admitted to the Membership of the College after examination: Dr. Noel Dean Bardswell, Banchory; Mr. Charles Plumley Childe, Southsea; Dr. George William Hamilton Cumming, Torquay; and Dr. Charles Harold Johnson, Edinburgh. The Registrar reported that since the last quarterly meeting 33 persons had obtained the licence of the College by examination.

The Curator submitted his report for the past year regarding the research and reporting undertaken in the laboratory during the year and the expenditure incurred. The report showed that 25 workers had been engaged in research, 1122 specimens had been reported on, and the expenditure had amounted to £822 6*s.* 10*d.* The arrangements which had been concluded between the College and the town council, by which the bacteriological diagnosis of suspected cases of tubercle, diphtheria, and enteric fever occurring among the citizens of Edinburgh is carried out in the laboratory at the expense of the town, had been in working order for some months. Negotiations were in progress between the College and the Local Government Board, whereby it was intended that the bacteriological examination of suspected cases of plague would be conducted within the laboratory on payment of a fee for each report identical with that paid by the English Local Government Board. A special department of the laboratory, isolated from the rest of the premises and judged suitable by the President (Dr. Fraser), had been set apart for the purpose.

Dr. Alexander Bruce was after examination recognised as a lecturer in Practice of Medicine and Dr. William Wood

was similarly recognised as a lecturer on Materia Medica and Therapeutics, the President conferring on them certificates of qualification.

The Parkin Prize, which is in the gift of the College, was awarded after competition equally between Dr. W. G. Aitchison Robertson and Dr. Noel Dean Bardswell. The subject of the essay on the present occasion was in terms of the deed of bequest: "On the effects of volcanic action in the production of epidemic diseases in the animal and in the vegetable creation and in the production of hurricanes and abnormal atmospherical vicissitudes."

A letter was submitted from the Principal and Vice-Chancellor of the University of Glasgow inviting the College to take part in the celebration of the ninth jubilee of the University. It was unanimously agreed to accept the invitation and remitted to the council to prepare an address of congratulation for presentation on the occasion.

Aberdeen Royal Infirmary.

The annual report shows that the total income for the year 1900 was £11,708 9*s*. 4*d*. and the expenditure £12,032 1*s*. 11*d*., leaving a deficit in the year's work of £323 12*s*. 7*d*. The number of occupied beds has increased from 202·3 to 207·5, and along with other institutions the hospital has suffered from the high prices prevailing for coals, provisions, &c. The cost per occupied bed thus rose to £50 13*s*. 9*d*., compared with £48 0*s*. 7*d*. in 1899. The donation of £25,000 by Lord Mount-Stephen enabled the whole debt on the institution to be cleared off, leaving a balance to the good of £11 6*s*. 5*d*. On buildings in connexion with the jubilee extension scheme there has been a total expenditure of £75,297 7*s*. 8*d*. The revenue for the year included £68 10*s*. for medical students' fees. At the Convalescent Hospital, Cults, 252 patients were received and treated during the year. The total expenditure was £612 5*s*. 2*d*., being £24 0*s*. 7*d*. above the income for the year.

Aberdeen Royal Asylum.

The number of patients in the Royal Lunatic Asylum on Dec. 31st last was 837. During last year there were 308 admissions, 81 discharges, and 81 deaths. The building improvements have gone on steadily, and the new hospital wings have relieved the overcrowding of patients in the main asylum. Additional ground has been purchased in Aberdeen, and the branch at Daviot has been restored and the furniture which had been destroyed by fire there has been replaced. The total income for 1900 was £32,618 5*s*. 1*d*. and the expenditure was £29,317 7*s*. 3*d*., leaving a surplus of £3300 17*s*. 10*d*. The report by Dr. W. Reid, the medical superintendent, shows that though there were many difficult and anxious cases to treat there were no serious accidents during the year.

Small-pox in Glasgow.

The number of patients officially reported under treatment on Feb. 11th was 436, a number only eight in excess of the total a week earlier. Considering the rapid rate of advance which marked the course of the epidemic in its earlier phases the record just quoted is relatively satisfactory. But it must be remembered that many of the patients admitted to hospital during January are now convalescent and are being discharged. Thus a mere comparison of the weekly totals gives too favourable a few of the facts of the epidemic. On the whole, however, the position and outlook are improving. The new cases, as the figures just quoted show, are only occurring in sufficient numbers to keep the total number under treatment substantially the same as it was a week ago. With few exceptions, too, the admissions come from the recognised infected areas. Revaccination has become much more popular, and it is only just to the public to add that there has been little or no disposition to indulge in panic or to listen to exaggerated or alarming statements. So far the sanitary authorities have found no time to issue a tabulated statement of the details of the epidemic. Their energies, as can readily be imagined, have been severely taxed, and it is to be hoped that soon they will be able to claim that the epidemic is stayed.

Scottish Triple Qualification.

The last quarterly conjoint examinations of the Scottish Medical Corporations were distinguished by a very high percentage of rejections, the significance of which may possibly be open to various interpretations. The facts are as follows. At the first examination of 26 candidates nine passed; for the second examination, 35 candidates entered and 13 passed; at the third examination, 22 passed out of 30 candidates; and of 74 entrants for the final examination, 35 were successful. The high percentage of rejections in the earlier examinations is noteworthy.

Return of a Medical Officer.

Dr. Hugh Colligan Donald has recently received a cordial welcome from his numerous friends in Paisley on his return from South Africa, where he has been serving for over a year. Shortly before he sailed for home Dr. Donald had the misfortune to sustain a fracture of the leg, from the effects of which, however, he has now practically recovered.

Professor Cleland on Education.

At a recent meeting of the Educational Hand-work Association of Scotland an address was delivered by Professor Cleland, F.R.S., who discussed the value of the promotion of manual dexterity as a means of cultivating the intelligence. Professor Cleland, after alluding to the fact that the early mental processes of the child were all concerned with sense impressions or muscular efforts, considered it was rational that in the training of children use should continue to be made of the method by which nature had already taught them so much. It was necessary, however, that exercises should be chosen which would teach the child to observe and to think, actions capable of being performed by routine having necessarily but little mental educational value. Modelling and drawing were commended as specially valuable methods of training for children.

Feb. 12th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Direct Representative for Ireland.

SIR WILLIAM THOMSON has been re-elected Direct Representative for Ireland upon the General Medical Council. He received 1130 votes, against 245 given for Mr. T. Laffan of Cashel.

Belfast Medical Students' Association.

THE fourth annual meeting of this society was held in the students' union of Queen's College, Belfast, on Feb. 5th, the President (Mr. Walter Phillips, B.A.) being in the chair. The President introduced Mr. J. E. MacIlwaine, B.Sc., who gave an account of his experiences as dresser with the Irish Hospital which was sent by Lord Iveagh to South Africa. The paper, which was admirably illustrated by a series of slides prepared from photographs which had been taken in Africa, gave an extremely interesting account of the good work which had been done by the Irish Hospital, and, coming from one who took such a personal part as the author did in all details of the work, it presented a very vivid picture. The staff of the Irish Hospital saw little surgery but an immense deal of medical ailments, especially enteric fever, which apparently is almost invariably returned as "simple continued fever." Many of the cases of this disease treated were very severe, and Mr. MacIlwaine spoke hopefully of the results of inoculation against the disease but thought that the immunity gained was not a very long one. Several of the college medical professors and of the Royal Victoria Hospital staff who were present spoke in very commendatory terms of Mr. MacIlwaine's most excellent paper.

North of Ireland Branch of the British Medical Association.

The adjourned winter meeting (owing to the death of the late Queen) was held in the Belfast Museum on Feb. 7th, Professor John W. Byers, the President, being in the chair. Dr. T. S. Kirk showed a girl in whom he had by operation restored the nose after Lupus. Dr. J. B. Moore showed the specimens from a case of Gastro-jejunostomy. Professor T. Sinclair showed a series of Vesical Calculi of unusual size removed by suprapubic cystotomy, and a number of Gall-stones removed from a case of persistent jaundice in a woman. Dr. Moore read notes of a case of Perforated Gastric Ulcer successfully operated on; Dr. A. B. Mitchell read notes of a case of Hour-glass Stomach (the result of cicatrisation following an ulcer) which had been successfully operated on; and Dr. W. Calwell read a paper on When Should a Case of Chronic Dyspepsia be Explored by the Surgeon? These communications led to a most interesting discussion on recent advances in the surgery of the stomach in which the following took part: Dr. P. Redfern, Dr. A. Fullerton,

Dr. A. Dempsey, Professor Sinclair, Dr. J. S. Darling (Lurgan), and the President. It was brought out in the debate that the first successful operations in Ireland for a perforated gastric ulcer and for hour-glass contraction of the stomach were done by two Belfast surgeons, and that up to the present date 21 cases of operation for perforated gastric ulcer have been done by Belfast surgeons, with 12 recoveries, within the last three years.

Portaferry Dispensary District.

Mr. E. Smyth was on Feb. 9th elected by the Downpatrick Board of Guardians as medical officer of the Portaferry Dispensary District.

The Belfast Lunatic Asylum.

The visiting committee reported to the committee of management of the asylum on Feb. 11th that they endorsed the statements made by Sir G. P. O'Farrell, the Government inspector, in regard to the great insufficiency of accommodation, particularly for female patients, there being an excess of 228 inmates beyond the certified limits of accommodation in the establishment. It would appear that out of 322 admissions during last year 188 were received from the workhouse, as compared with 72 in the previous year. In reply to inquiries as to the cost of construction of asylums of various types the medical superintendent, Dr. W. Graham, said that at Aberdeen the cost of the villa type was £142 per bed, at Berlin £200 per bed, at Leipsic £142 per bed, at Birmingham £415 per bed on the pavilion or corridor plan (and this did not include the land); at Canterbury it was £460 per bed, at Croydon £458 per bed, and in East Sussex £282 per bed, but none of these sums included maintenance. He had no doubt that it would be cheaper to erect on the villa colony system rather than to build one huge establishment. The proposed asylum for Belfast was for 820 patients, and with land, furnishing, and equipment it would run to almost £300 per bed. They used their land up very largely in this system. A resolution approving of the adoption of the villa system as recommended by the medical superintendent was carried; and it was agreed that the surveying of the ground should be carried out by the borough surveyor's department, and that a ground plan should be prepared with the advice and coöperation of the medical superintendent as to where the villas should be placed.

Feb. 12th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Alleged Scandal with regard to a Post-mortem Examination.

A FORTNIGHT ago the daily press discovered an alleged scandal which gave the opportunity of writing many articles against the medical profession. Last year a police official named D—— met with a carriage accident. He was laid up for some months and was finally admitted to a hospital where he died some days after admission. His widow, on the advice of her friends, tried to exploit the accident with a view to getting damages out of the owner of the carriage which was the cause of the accident. The hospital authorities certified that the patient had died from alcoholic cirrhosis. The presiding judge ordered an inquiry and Dr. Socquet was bidden to make a post-mortem examination on the body which had been buried for nearly a year. According to the daily press Dr. Socquet was much surprised to find that the body had been disgracefully treated. The skull had been opened and in place of the brain it was found to contain some old newspapers and some tow. The viscera were missing from the abdomen and the thorax, which cavities contained three livers and sundry foreign bodies, such as cigarette ends, pipe-stems, string, vegetable peelings, and the various rubbish generally found in a room, which had apparently been emptied into the body. Of course there was a great scandal and interviews were published with the Director of the St. Antoine Hospital, with Dr. Gilles de la Tourette, in whose wards the man died, with the Assistance Publique, with the *internes*, and generally with everybody except Dr. Socquet. Well, I learn from him that the whole story is an absolute invention, except that he found that a necropsy had been held on the body of D——. He knew that already, for the post-mortem examination had been held by permission of the family of D——; the foreign bodies, however, existed only in the imagination of the reporters. Nevertheless, to give some satisfaction, the Director of the Assistance Publique has revived an ancient regulation which has been vigorously put into action as regards the hospitals. The result will be the disappearance of pathological anatomy. As it is no post-mortem examination can be made without the express permission of the family of the deceased, a permission which is more and more rarely given But in addition, by the strict letter of the law now applied the operating pathologist cannot take away an organ, even in a granted post-mortem examination, without a special permit for each case which has to be obtained from the Director of the Assistance Publique. As a matter of fact, necropsies cannot be made within 24 hours of death and burial usually takes place as soon as possible after the examination, so that the medical man has only about two or three hours in which to make his examination. It will therefore be impossible for him, if he should come across any interesting pathological condition of an organ, to get the requisite permission from the director in the time at his disposal. As a rule this regulation is never insisted upon, so that its enforcement can only be considered as a pandering to the daily press. The last meeting of the Society of Legal Medicine gave the sequel to the matter. Dr. Gilles de la Tourette explained that the post-mortem room at his hospital was very small and held only two tables. If there happened to be many post-mortem examinations to make in one morning it was difficult to keep the various organs removed separate, and mistakes easily occurred when the post mortem room porter was putting them back. The responsibility rested first with the porter, next with the authorities for not providing a post-mortem room of sufficient size for a big hospital, and, finally, with the examining magistrate, who should have been cognisant of the fact that a post-mortem examination had been already performed. Finally, Dr. Gilles de la Tourette asked his colleagues to appoint a committee which should demand both from the courts and the Administion the favour that post-mortem examinations and their results should be absolutely privileged (*secret absolu de l'autopsie*). M. Brouardel, who was prevented from being present, asked that a second meeting should be held, as he had some important information bearing on the case of D—— to bring forward. The matter was referred to a committee consisting of M. Piquet, M. Vibert, M. Lefuel, M. Constant, Dr. Gilles de la Tourette, and two other medical men versed in forensic medicine.

Hygiene in the Post Office.

The Minister of Commerce, Posts, and Telegraphs recently set on foot an inquiry into the hygienic conditions of post-office employés with special regard to the question of tuberculosis. He instructed one of the departmental medical officers, Dr. Mignot, to report to him on the matter. The report shows that tuberculosis is responsible for 36 per cent. of the deaths among the staff, a much higher rate than the general tuberculosis death-rate for the whole of France. As probably the death-rate among the office staff is higher than the rate among the out-door staff the Minister has adopted the conclusions of the report and has issued three regulations relative to (1) the improving from a hygienic point of view of post-office buildings; (2) a medical examination of applicants for employ in the department; and (3) the creation of a committee to investigate the best means of establishing a sanatorium for the use of post-office employés suffering from tuberculosis. None of the staff is allowed to spit on the floor, special spittoons being served out, and all floors are to be rubbed over with a damp cloth instead of being swept dry. It is much to be hoped that all the great State departments will follow the example set by the Minister of Commerce.

The International Psychological Institute.

Last week the International Psychological Institute was founded at Paris, being the outcome of a private society which was started with that end in view. The institute is directed by an international committee of organisation of which the chief members are as follows:—Germany: Freiherr von Schrenck; England;[1] America: William James; France: d'Arsonval, Bouchard, Duclaux, Marey, Sully-Prudhomme, and Th. Ribot; Italy: Lombroso; Russia: Mendeleieff and Ochorowicz; and Switzerland: Th. Flournoy. The society is composed of members of three classes (1)

[1] The English member of committee was the late Mr. Frederic Myers.

foundation members who subscribe 10,000 francs; (2) subscribing members (*donateurs*) who give a donation of 1000 francs or an annual subscription of 100 francs; (3) ordinary members who give a donation of 250 francs or an annual subscription of 20 francs. The address of the institute is 28, Rue Serpente, Hôtel des Sociétés Savantes. The work of the institute will comprise experimental psychology, the anatomy, physiology, and pathology of the nervous system, hypnotism and other psychical phenomena, and social and criminal psychology. It is intended that the institute should be an experimental centre where *savants* throughout the world may find laboratories and clinical material with which they may pursue their researches under conditions of scientific accuracy. The first lecture, which was given by M. Duclaux, was a great success and bodes well for the future of the new undertaking. A notable audience assembled in the lecture-room in the Rue Danton, where many ladies, members of the institute, members of the Academy, and members of the Academy of Medicine were present. The forthcoming lectures should be as good—those of M. Dussaud, Mr. Frank Hales (Cambridge), M. Bergson, M. Van Gehuchten (Louvain), and of M. Pierre Janet have been already announced. M. d'Arsonval, M. Tardes, M. Ochorowicz and M. Bairac will announce theirs shortly.

Feb. 13th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Public Health Service in Prussia.

THE public health service in the kingdom of Prussia, which in the opinion not only of the medical profession but also of the general public is no longer in accordance with modern requirements, will now be reformed. The present state of this service and the reforms proposed by the Royal Commission have been described in former numbers of THE LANCET.[1] Unfortunately, the thorough reform so much desired by public opinion did not meet with the approval of the Prussian Parliament for political reasons which it would take too long to explain to foreigners. It will be remembered that the Royal Commission proposed the formation of a board of health in every district and circuit and the providing of a laboratory for hygienic work in every province. The medical officers to circuits (*Kreise*), who had hitherto been receiving small salaries and were thus compelled to engage in private practice, ought, in the Commission's opinion, to be made fully-salaried Government officials and to be debarred from private practice. In Parliament, however, the majority of these proposals were not accepted, and there is no longer any question either of laboratories or of boards of health for districts or of the general appointment of fully-salaried medical officers. The "reform," in fact, is limited to the institution of local boards of health, where they are desired by the local authorities, whilst the appointment of medical officers with adequate salaries and no private practice will only take place in those districts where there is a great amount of work. Except in a very few of the larger towns the medical officers will continue to act as medico-legal experts. The hopes once entertained as to the goodwill of the Government in this matter have been small enough since the Bill became law, and they have been additionally disappointed by the new Budget for the financial year beginning on April 1st. The Government asks for funds for the appointment of only 21 fully-salaried medical officers out of 499 at present employed. The salaries when private practice is not allowed are very small, beginning with 3600 marks (£180) and rising to 5700 marks (£285). Moreover, they receive a sum for house rent and are entitled to pensions when they retire, and in the event of their death pensions will be granted to their widows and children. The second class, the medical officers with permission to practice, will form the great majority. Hitherto they have been receiving the ridiculous sum of 900 marks (£45), but now they will have from 2250 marks (£112 10*s.*) to 4200 marks (210), but no pension. Special medical officers to law courts are to be appointed in 15 cases only. The *Deutsche Medicinische Wochenschrift*, in criticising the Government proposals, states that the expenses of the "reformed," public health service are only 500,000 marks (£25,000) higher than they were before the reform. Dr. Wallichs, the district officer of health at Altona, forcibly remarks in the *Aerztliche Vereinsblatt* that care for the public health in Prussia continues to be a matter of secondary interest. He says that owing to the inadequate salaries paid to the medical officers who are debarred from private practice the great majority will prefer not to belong to this category but will rather remain in the second class with a still lower salary where they will have at least an opportunity of earning a livelihood by private practice. No reform at all would have been better than this "torso," which will for many years to come continue to be the organisation of the public health service in Prussia. Undoubtedly in this matter, so important for the public welfare, the leading State of Germany has been outdone by a good many of the smaller States where the sanitary organisation has been brought up to date.

[1] THE LANCET, Sept. 28th, 1895, p. 915, and April 24th, 1897, p. 1179.

Plague-infected Rats on Board Ship.

Some anxiety was felt lately at Hamburg when the port sanitary authorities found many dead rats on board the steamer *Pergamos*, and bacteriological examination showed that the animals had suffered from plague. The steamer and the cargo were therefore thoroughly disinfected and everything that the rats had gnawed was burnt by the fire brigade. No case of plague has subsequently occurred among the crew and the steamer has been allowed to leave for Italy.

The Imperial Council of Hygiene.

The regulations for the new Reichsgesundheitsrath (Imperial Council of Hygiene) have been published by the Federal Council. The council has been instituted in conformity with the new laws relative to epidemic diseases to be a consulting body in connexion with the Imperial Health Office. The members are elected by the Federal Council and the president and vice-president are appointed by the Imperial Chancellor. The membership is an honorary office and is tenable for only five years, after which time fresh elections will take place. The Imperial authorities and also the authorities of the individual confederated States have the right to send representatives to the meetings. The council is authorised to send commissioners to make inquiries in any part of the empire where intervention in hygienic matters seems to be necessary. There will be nine special committees of the council, the functions of which will be to take cognisance of the following subjects: (1) public health, including hygiene of dwellings, ventilation, &c.; (2) hygiene of food; (3) water-supply; (4) hygiene of factories; (5) epidemic diseases; (6) hygiene of hospitals; (7) the pharmacopœia; (8) hygiene of shipping; and (9) veterinary hygiene. The "plenum" of the council will meet only when convoked by the Imperial Secretary of State for the Interior. The proceedings are not public. It remains to be seen whether this programme will be realised and how often the Imperial Government will think it requisite to convoke the council. Care must be taken to prevent the council from coming into collision with the medical departments of the individual States which are very anxious to maintain their prerogatives in this respect, and whose influence is the greater as the executive is entirely under their control, whilst the Imperial Council of Health is only a consulting body without executive functions. Of the members of the council the following prominent names may be mentioned: Professor von Bergmann, honorary F.R.C.S. Eng., the well-known professor of surgery in Berlin University; Professor Binz of Bonn; Professor Buchner of Munich; Professor Flügge of Breslau; Professor Fränkel of Halle; Professor Gaffky of Giessen; Professor Gerhardt of Berlin; Professor Robert Koch, the bacteriologist; Professor Löffler of Greifswald; Professor van Noorden of Frankfurt; Professor Rubner of Berlin; Professor von Ziemssen of Munich; and many others.

Statistics of German Universities.

The number of students registered at the German Universities this winter is 34,363, as compared with 27,784 in the winter of 1894–95, so that an increase of 20 per cent. has taken place during the past six years. The attendance of students at the various universities is as follows:—6673 in Berlin, 4184 in Munich, 3584 in Leipsic, 1917 in Bonn, 1731 in Halle, 1638 in Breslau, 1350 in Tübingen, 1317 in Göttingen, 1280 in Heidelberg, 1218 in Freiburg, 1264 in Würzburg, 1132 in Strassburg, 1053 in Marburg, 967 in Erlangen, 874 in Königsberg, 847 in Giessen, 780 in Kiel,

733 in Munster, 726 in Greifswald, 681 in Jena, and 512 in Rostock. As regards attendance in the various faculties there are 2327 students of Protestant theology, 1584 of Roman Catholic theology, 10,511 of law and national economy, 7113 of medicine, 5200 of philosophy and history, 4722 of mathematics and natural science, 1157 of pharmacy, 1512 of agriculture, and 443 of dental surgery. Moreover, at the University of Giessen there are 126 students of veterinary medicine, but in other parts of Germany veterinary medicine is taught at special colleges not belonging to the universities. These figures, compared with those of the previous year, show that the students of Protestant theology have decreased by 86 and the students of medicine by 430. The students of other branches have increased considerably, especially the students of law, where the increase has been 47 per cent. during the past 10 years. At the University of Berlin there are 366 students registered in the faculty of theology, 2359 in the faculty of jurisprudence, 1312 in the faculty of medicine, and 2636 in the faculty of philosophy. With respect to nationality, 4679 students come from Prussia, 994 from the other States of the empire, and 714 from foreign countries. Of foreigners of European origin the majority (318) come from Russia, 112 from Austria, 83 from Switzerland, 62 from Hungary, 32 from Great Britain and Ireland, 22 from Italy, 20 from France, 20 from Roumania, 17 from Turkey, 17 from Servia, 16 from Bulgaria, 15 from Sweden, 15 from Greece, 12 from the Netherlands, 11 from Luxemburg, five from Belgium, four from Spain, three from Denmark, and one from Portugal. Of foreign students from distant parts of the world 114 come from America, 62 from Asia, three from Africa, and one from Australia. Berlin University is therefore in reality cosmopolitan. In addition to the duly registered students there are 5466 persons who are entitled to attend the lectures there; for instance, the students of the technical and other academies and others to whom this right has been granted by a special decree of the Senate of the University. The number of female students is 439.

Feb. 11th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Mortality and Serum Treatment of Diphtheria in Rome.

A PAPER by Dr. Spolverini in a recent number of the *Policlinico*[1] on the mortality from diphtheria in Rome shows that a remarkable increase occurred last year both in the number of cases and in the death-rate of that disease in this city. The period studied (from July 1st, 1895, to May 31st, 1900) covers the time following the introduction of the serum treatment. During each of the first four years of that period the average mortality was only 16 per cent., whereas previously it had ranged between 60 and 70 per cent. From July 1st, 1899, to May 31st, 1900, however, the cases were much more numerous than in the four preceding years, whilst the death-rate was almost doubled, reaching no less than 28 per cent. To explain such a sudden and exceptional rise various factors must be considered, chief amongst which is the occurrence of previous febrile diseases, more especially of measles. This complaint was indeed very prevalent in Rome from November, 1899, till the end of the following May, and an analysis of the cases treated in hospital during that time shows that out of a total of 56 cases 20 had a history of an attack of measles preceding the diphtheria. Amongst these same cases there were 16 deaths, of which 12 occurred in children who had suffered from measles not long before. The localisation of the false membrane is always a powerful factor in determining a high rate of mortality in diphtheria. This is well seen from the following analysis of the 985 cases notified to the authorities during the years under consideration:—

Localisation.	Cases.	Deaths.	Mortality per cent.
Pharynx	538	78	14·49
Larynx	447	112	25·05

This cause operated still more fatally in children the resistance of whose tissues had been weakened by preceding attacks of measles, for of the 133 laryngeal cases which occurred between July 1st, 1899, and May 31st, 1900, no less than 44 (33·83 per cent.) were fatal. Over the same period intercurrent acute affections (which invariably swell the rate of mortality in diphtheria) were exactly double the average of the first four years and the death-rate was increased to a corresponding degree. The paper concludes with remarks on the serum treatment, which Spolverini regards as unfailing if employed on the first day of an attack of diphtheria, but as next to useless if delayed until the third or fourth day, as happens only too often in a hospital, to which the most desperate cases are usually sent, very frequently late in the course of the disease. A quantity of serum varying from 3000 to 4000 units was used, and the first signs of improvement were generally noticed after 24 hours from the time of injection. No bad results are attributed to the administration of the serum and in those cases treated early all the patients recovered completely without ever presenting any complication.

Proposed Law for the Prevention of Malaria.

The text of this Bill as drawn up by Celli and others has been published. It consists of five articles, the first of which provides for the official declaration of affected zones, and the second for the gratuitous distribution of quinine to the poor by municipal authorities and the taxation of the property for the purpose of raising the necessary funds. Article 3 makes it incumbent upon the Governmental department or Government contractor responsible for the execution of any public works which give rise to the occurrence of malarial fevers to supply quinine gratuitously, and requires that if any person dies or becomes permanently disabled from malaria whilst employed on such works the same indemnity must be paid as that established for persons under the Employers' Liability Act of 1893. Article 4 enjoins the protection against the entrance of insects to all houses within the malarial zone inhabited by persons employed in the public service and on public works from the beginning of June till the end of December, and offers rewards not exceeding 1000 lire (£40) to proprietors and manufacturers who do the like for the houses of their employés and of the peasants. Article 5 empowers the Government to take whatever further measures may seem necessary for the carrying out of the provisions of the law after such measures have been approved by the Superior Council of Sanitation and by the Council of State.

The Foreign Practitioner Question.

On coming up for discussion in the Chamber of Deputies the Bill proposing amendments in the law regulating foreign practice in Italy, the text of which I gave in my last letter,[2] was, at the request of its sponsor, Dr. Santini, referred back to the Parliamentary Committee which drew it up. On account of the change of Government now taking place a considerable time must elapse before the measure can be reintroduced, and hopes are entertained that it will be abandoned altogether.

Feb. 9th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Elmira Reformatory, New York State.

IN this large reformatory there has been within the past year and a half a complete change in management with a corresponding somewhat radical alteration in the methods pursued. Mr. Brockway, the late superintendent, had been at the head of the institution for a number of years, and although the means followed by him to preserve discipline among and to educate the inmates had for a considerable time been harshly criticised in the lay papers as unnecessarily severe, it must in his favour be said that his results were on the whole satisfactory and met with the general approval of the majority of the medical journals of America. The twenty-fifth annual report of the board of managers has recently been presented to the New York State Legislature, and referring to methods of administration the report says: "The radical difference of views which had existed between the remaining members of the old board

1 Policlinico, Sezione Pratica, anno vii., fasc. 5.

2 THE LANCET, Jan. 26th, 1901, p. 290.

and those more recently appointed by Governor Roosevelt had made harmony of action impossible and it was not until the beginning of the year 1900 that the latter were able to undertake and enforce the measures for improvement. For a number of years tuberculosis has been an increasing and dangerous feature among our prisoners. Many have it upon arrival in a more or less advanced stage; others develop it under the trying conditions of prison life and association with those already affected. The management further became convinced, by careful scrutiny extending over many months, that prisoners healthy on arrival became affected. There was marked absence in the medical department of our predecessors of full and detailed records both as to cases of ordinary disease and of insanity." Under the head "discipline" the report says: "Since the statement in the last annual report that flogging had been abandoned at Elmira some sincere friends of the reformatory have expressed the fear that its discipline would deteriorate. The board has not shared that fear." The maintenance of the educational system by the present board has been seriously questioned by those who profess to see in the withdrawal of Mr. Brockway the first step towards the destruction of the fabric which he has laboriously created. The board finds in this system much to admire and uphold, something to criticise and modify, and something to condemn. The gross number of inmates who have been on the books during the past 12 months is 2050, of whom 666 were received during that period and 774 were dismissed, producing a daily average of 1365. The efficient control of so large a reformatory is an undertaking which will tax the brains and energies of the most active and intelligent superintendent and staff. It remains to be seen how the new methods will work. The result will be a matter of much interest to philanthropists everywhere.

Dental Surgeons in the United States Army.

The new Army Bill before Congress has the following provision: The Surgeon-General of the Army, with the approval of the Secretary of War, is authorised to employ dental surgeons, to serve the officers and enlisted men of the regular and volunteer army, in the proportion of not exceeding one for every 1000 of said army and not exceeding 30 in all. The said dental surgeons shall be employed as contract dental surgeons under the terms and conditions applicable to army contract surgeons, and shall be graduates of standard medical or dental colleges, trained in the various branches of dentistry, and of good moral and professional character, and shall pass a satisfactory professional examination. It is also provided that three of the number of dental surgeons to be employed shall be first appointed by the surgeon-general, with the approval of the Secretary of War, with reference to their fitness for assignment under the direction of the surgeon-general, to the special service of conducting the examinations and supervising the operations of the others, and for such special service an extra compensation of $60 per month will be allowed; also, further, that dental college graduates now employed in the hospital corps, who have been detailed for a period of not less than 12 months to render dental service to the army and who are shown by the reports of their superior officers to have rendered such service satisfactorily, may be appointed contract dental surgeons without examination.

Vaccination in Alaska.

The Yukon Council, the legislative body of the region, has passed an ordinance requiring all persons in Yukon Territory, extending from White Horse to Forty Mile, to be vaccinated as soon as the vaccine arrives. This order affects from 10,000 to 15,000 persons. The Council has appointed the six Dawson physicians to make a house-to-house visitation throughout Dawson and along all the Klondyke creeks and to vaccinate all persons who have not been vaccinated within the last seven years. The Government bears all cost of vaccination under this compulsory order and the operators are paid $30 a day for their services. A mounted policeman will accompany each physician to see that his mission is not abused. Anyone refusing to submit to vaccination will be liable to a fine of $250 or three months in jail, and anyone not reporting a case of rash or anything looking like small-pox will be subject to a much heavier penalty.

Notification of Tuberculosis.

Dr. H. M. Biggs, of the Board of Health of New York City, in a recent address referred to certain English writers who had argued against the notification of tuberculosis, among whom was the late Sir Richard Thorne. To Dr. Biggs it seemed incomprehensible that a tuberculous person should be permitted to live in a crowded workroom where he would be a menace to all about him. Tuberculosis, while it is a highly infectious disease, in his opinion should be put in a class by itself. As to the means of limiting its spread, the best plan is compulsory notification and registration. The New York Board of Health has not classed it as a "contagious disease" but as a "communicable" disease. When a report comes into that department notices are at once sent out to the physician and to the patient giving proper instructions as to preventive measures. Another important thing is that it is not necessary for the general public to be aware that a case of tuberculosis has been reported to the Board of Health; the records are simply for the use of the department. It was from fear of publicity that a strong protest was made against compulsory registration in New York. At this time in New York, where there is compulsory registration, about 10 000 cases are reported annually, excluding duplicates. It has been found that a man suffering from the disease goes from institution to institution, thus being reported as many as 15 or 20 times. City hospitals for advanced cases and country hospitals for incipient cases seem to Dr. Biggs to be the ideal plan.

Jan. 18th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The New Medical Act, New South Wales.

THE first prosecution under the new Medical Practitioners Amendment Act took place at the Central Court, Sydney, on Dec. 28th, 1900, when Charles Saunders was charged that, "not being a legally qualified medical practitioner within the meaning of the Medical Practitioners Act, 1898, or entitled to be registered as a legally qualified medical practitioner within the meaning of the Medical Practitioners Amendment Act, 1900, he did on Dec. 12th use the title 'Doctor,' implying that he was a legally qualified medical practitioner." The proceedings were taken by the police and conducted by the Crown law officers. Evidence was given that suspended from the balcony of defendant's residence in Pitt-street, Sydney, was a lamp with "Dr. Saunders" printed on it, and on the window was printed, "Advice and medicine free." The defendant was not registered and he admitted that he intended the letters "Dr." to mean "doctor," though he was merely a chemist. He was fined £50 and costs with the alternative of a month's imprisonment.—The Council of the New South Wales Branch of the British Medical Association has passed the following resolution with reference to Mr. Meagher, M.P., who took charge of the Medical Act in the Legislative Assembly:—

The council desires to convey to you its high appreciation of your endeavour to improve the legislation governing the relations between the medical profession and the public.

Election of Dr. James Graham as Mayor of Sydney.

On Dec. 13th, 1900, was held the first meeting of the new council of the city of Sydney and one of its first acts was to elect Dr. James Graham as mayor. The Sydney City Council has of late come in for very searching criticism for its lax conduct, especially of the financial and sanitary affairs of the city. A party of reform was instituted which took active measures when the plague broke out, a vigilance committee being appointed to inquire into sanitary defects. Dr. Graham took a very leading part in this reform movement and was chairman of the vigilance committee. In this capacity he gave a great deal of time and labour to the work and roused the civic authorities out of their lethargy. The value of his services to the community in this respect can hardly be over-estimated and it is gratifying to find that they have been rewarded. The new mayor promises to do his utmost for the reorganisation of the health department of the city. The medical officer of health of Sydney will in future be required to give his whole time to the duties of his office with a reorganised and enlarged staff of competent inspectors. The new mayor will also endeavour to conduct the business of the council on more orderly lines and to have the exact financial position of the city made clear. The past career of Dr. Graham both in the profession and in public life is a warrant that he will be successful in carrying out the proposed and necessary reforms. He is a native of Edinburgh and is 44 years of age. He graduated as M.A. and M.D. at

Edinburgh, gaining the gold medal for his thesis on "Hydatid Disease in Australia." He was for some years medical superintendent of the Prince Alfred Hospital and was also on the honorary staff. He is now a director both of the Prince Alfred Hospital and the Sydney Hospital and was the founder of the Women's Hospital. For seven years he has been the Parliamentary representative of the Belmore electorate in the Legislative Assembly. He entered the city council two years ago and, as stated, from the first he was the leader of the Reform party. In his profession he has been very successful and is very popular. His election as mayor has given great satisfaction to the medical profession.

The Sydney and Suburban Provident Medical Association.

Rule 24 of the Sydney and Suburban Provident Medical Association is to the effect that "a general meeting of the profession shall be held once a year to receive a report on the working of the association." Such a meeting was recently held, Dr. P. Sydney Jones presiding. The report showed that the association had met with a fair measure of success and that the working expenses were about 17 per cent. This was a little higher than those of the similar association at Eastbourne, but the large area embraced by the Sydney association increased the cost of working.

Experiences of Australian Surgeons in the South African War.

The Australian surgeons who went to South Africa either as consultants or with the various contingents are now returning and describing their experiences. In the *Intercolonial Medical Journal of Australasia* for December appear two papers, one by Sir T. N. Fitz-Gerald, who went from Melbourne as consulting surgeon, and the other by Mr. A. Honman, medical officer in charge of the second Victorian contingent. Sir T. Fitz-Gerald was appointed to inspect Natal and he gives an account, necessarily brief, of the military hospitals there—at Pietermaritzburg, Mooi river, Estcourt, Ladysmith, and Newcastle. He speaks in the highest terms of the work done both by the Royal Army Medical Corps and the army nursing service, but he says that the instruments supplied to the various hospitals were of a very obsolete kind and reminded him of the antiquated cases provided by economising governments for the emigration service 50 years ago. The only exception was the x ray apparatus, which was complete and very successfully used, though in many cases the results obtained by it in locating bullets were misleading. He narrates several interesting cases that came under his observation. He found generally that wounds healed much better at the camp than at the base hospital, that there was not much difference between the effects of the Mauser bullet at long and short ranges, and that the wounds of entry and exit gave little information as to the extent of the injury. The amount of splintering of bone probably depended upon the angle at which it was struck or was due to an expanding bullet, the apex of which had been purposely divided. Mr. Honman also discusses in some detail the effects of the Mauser bullet at different ranges and quotes a number of cases to show the extreme diversity of the nature of the injuries inflicted, especially on bones. The chief impression left was "that however shattered a bone may be it may marvellously recover" and that the conclusions as to the effects of bullets derived from experiments on dead bodies had not been borne out by actual results. As a regimental surgeon whose duty it was to follow on with the troops he had not much opportunity of watching the progress of wounds, but of those he did see few went wrong. The first-aid dressing that every soldier carried with him, gauze, gauze tissue, and jaconette, was sufficient for most cases, and it was astonishing how quickly wounds healed and how soon wounded men rejoined their regiments. Dr. A. MacCormick of Sydney, who went with the New South Wales Army Corps, has just returned. He accompanied the troops *viâ* Stormberg to Bloemfontein, where the corps was divided and Dr. MacCormick with half a company joined the troops under Ian Hamilton *viâ* Kroonstad and Lindley to Heilbron and then to Pretoria and Diamond Hills. He was several times under fire, but he says that enteric fever was far more disastrous to the troops than was the enemy. Major Fiaschi, who was with the New South Wales Army Medical Corps No. 1 Field Hospital, has also returned to Sydney and speaks in the highest praise of the men of his corps, who have been nearly all the time under fire since they arrived at the front twelve months ago. The corps was first sent to the Orange river and then accompanied Lord Roberts's column up to the Modder, Jacobsdal, and Paardeberg. They were present at the storming of Cronje's laager and at the battles of Poplar Grove and Abram's Kraal. They were in the advances on Johannesburg and Pretoria, then to Middleburg, where they got the worst cases from General Buller. Finally they accompanied General Hutton to Kaafsche Hoof and then retired to Heidelberg. Major Fiaschi considered the New South Wales Field Hospital as good as any in the war, but its equipment was not sufficient and the military orders want remodelling. If the surgeons had not taken their own instruments with them many an operation would have been unsuccessful or impossible. Major Fiaschi was personally complimented by Lord Roberts at Bloemfontein, and General French spoke in warm eulogy of the services of the New South Wales Army Corps.

Perigastric Adhesions.

Mr. Fred. D. Bird contributes a long and interesting paper to the *Intercolonial Medical Journal* for December on the subject of Perigastric Adhesions, dealing, not with the denser forms to which attention has been drawn by others, but to very slight forms which are apt to be overlooked in an operation unless the operator specifically searches for them. Some are secondary to healed gastric ulcer, but most, he believes, are in the neighbourhood of the bile-ducts, due to a cholangitis from bacterial infection. The adhesions are not dense and widespread but thin and wiry. The main symptom is epigastric pain, started or increased by food and not relieved by medical treatment. Mr. Bird quotes a number of cases in support of his views.

Successful Suturing of the Ends of a Destroyed Median Nerve to the Ulnar Nerve.

In the same number of the *Intercolonial Medical Journal* Dr. W. Moore records a very interesting case. A boy aged 14 years was admitted to the Melbourne Hospital suffering from a gunshot wound of the forearm which exposed the flexor muscles, while the median nerve was seen as a dark cord on the wound surface and sensation in the fingers supplied by it was completely gone. Ten days after the injury four inches of the exposed nerve separated as a slough. Five weeks after the injury, when the wound was a uniform granulating surface, an operation was undertaken for the repair of the nerve. The two ends of the median nerve were dissected free and the ulnar nerve was then exposed at the wrist and at the upper part of the forearm. The divided ends of the median nerve were freshened, the sheath of the ulnar nerve was opened opposite them, and the ends of the median were attached to the ulnar by fine catgut passing through the whole thickness of the median and through a few fibres of the ulnar, and by catgut sutures bringing the sheaths of the nerves into accurate apposition. The surface of the wound was covered by a skin flap from the upper abdomen against which the arm was fixed. A month later the wound was soundly healed and sensation had returned in the parts of the hand supplied by the median.

Jan. 10th.

Obituary.

LESLIE OGILVIE, B.Sc., M.B. EDIN., M.R.C.P. LOND.

THE death of Dr. Leslie Ogilvie, which took place at his house in Welbeck-street on the evening of Feb. 2nd, must have come as a painful shock to his numerous friends, many of whom had seen him apparently as strong and vigorous as usual only a few days before. He first became ill on the morning of Sunday, Jan. 27th, and symptoms of pneumonia of a peculiarly sthenic type soon became manifest. It was no doubt on account of his fine bodily health and his strong constitution that he was able to maintain the fight against the disease as long as he did.

Leslie Ogilvie was born in Glasgow in 1853, the son of a man remarkable even in Glasgow for his energy and enterprise and no less for his high standard of business rectitude. He was educated at Gilbertfield House, Hamilton, and at the High School of Glasgow, and he went to Edinburgh University in 1868. He was keenly interested in natural science and at first devoted himself to this and took his B.Sc. degree. He was particularly fascinated by geology, then taught in Edinburgh by Mr., now Sir, Archibald Geikie, his favourite professor, and ever since a most cordial friend. Like so

many men who, in those days especially, went to Edinburgh with other views, he was caught in the vortex of medical interests and drawn into the curriculum. He took excellent places in his classes and during one session he acted as prosector in anatomy to Professor (now Sir William) Turner. Still maintaining his interest in natural history he also at this time dissected a shark to illustrate Professor Turner's monograph on the Elasmobranch fishes. After taking his medical degree in 1876 he studied in Paris for a time but returned to Scotland to act as locum tenens for Dr. David Stirling of Perth, one of the best known and most highly esteemed practitioners in Scotland. He afterwards went abroad for two years, studying in Vienna and elsewhere, acquiring a good knowledge of French, German, and Italian, languages from which he subsequently derived much literary pleasure. He came to London in 1879 and commenced practice. Very soon after his arrival he, along with Dr. G. L. Laycock, Dr. Colcott Fox, and others, became interested in a somewhat languishing dispensary then known as the Bell-street Dispensary for Children. Thanks to their combined labours it soon became so much appreciated that it seemed justifiable to associate beds with the out-patients' work and it was converted into a hospital, the now well-known Paddington-green Children's Hospital, of which he was senior physician at the time of his death. For many years he devoted much time and energy to his work here, and those who knew his cordial and genial manner will understand how much his work was valued both by patients and colleagues. Latterly his chief interest was in insurance work. He was medical referee to the Standard and Scottish Life Companies and a paper read by him a few years ago before the Edinburgh Society of Actuaries is one of the most thoughtful and important contributions to the medical aspects of life insurance in recent years. He became M.R.C.P. in 1889, and two years ago was elected a member of the Athenæum Club. His social gifts imposed many duties upon him. For nearly 15 years he was a most popular secretary of the Edinburgh University Club of London, and he was for several years President of the Burns Club. He was married a few years ago and leaves a widow and three children.

Such was Leslie Ogilvie's career as it appeared to the public. To a large circle of friends, however, he was much more than such a bare outline would seem to indicate. His was one of those rare fine natures which attract to themselves the devoted affection, one might almost say the love, of those who know them well. It was not only that he was genial, kind-hearted, and open-handed almost to a fault, but he possessed also that singular personal attractiveness which attached to him in a peculiarly close way those who knew him well and induced mere acquaintances to enrol themselves in the ranks of his friends. He was fond of music and literature, especially poetry, and he had a peculiarly fine literary instinct which a busy life left him too little opportunity of exercising. He was also fond of outdoor amusements; for many years he was an ardent member of the London Scottish, and up till the last a keen and good golfer. Such are but a few of the facets of a many-sided and lovable nature. His death will be deeply mourned by many who knew him only slightly; to those who knew him well it is nothing less than an irreparable calamity.

Medical News.

ROYAL COLLEGE OF SURGEONS IN IRELAND: EXAMINATION FOR REGISTERED PRACTITIONERS.—Mr. Thomas Blanchard Sellors, L.S.A. Lond., having passed the necessary examination has been admitted a Licentiate in Surgery of the College.

METHODS OF VACCINATION.—At the meeting of the Devonport Board of Guardians held on Feb. 4th it was decided, upon the suggestion of the Vaccination Committee, to draw the attention of the Local Government Board to the fact that a private medical practitioner might legally vaccinate a person in one place only and certify that such person had been successfully vaccinated, whereas a public vaccinator must vaccinate in four places. The guardians consider that a child ought to be vaccinated in more places than one, and they therefore urge the Local Government Board to endeavour to get the law altered.

BATH ROYAL UNITED HOSPITAL.—Through the liberality of two members of the committee of this hospital a bacteriological laboratory has been added to the institution.

FROM a return presented at the last meeting of the Leicester Board of Guardians it appears that during the year 1900 there were 446 cases of successful primary vaccination in the borough as against 219 for the year 1899.

MEDICAL SERVICES APPRECIATED.—At a meeting held on Feb. 7th of the Stratford-on-Avon Board of Guardians, Mr. C. Couchman (the vice-chairman) proposed a motion, which was unanimously adopted, tendering grateful thanks to Mr. James Arthur, M.R.C.S., on his resigning the post of medical officer and public vaccinator of the Wootton Wawen district of the union, after 35 years' efficient performance of the duties attached to the office.

A HANDSOME BEQUEST.—Probate has been granted in the Gloucester Registry of the will of the late Mr. John William Ormond Howes, a retired Cheltenham tradesman, who died about a month ago and whose estate has been proved at just under £14,800. After payment of personal bequests to the executors, solicitor, and housekeeper, amounting to £1200, the residue is bequeathed to the Cheltenham General Hospital, which will receive the net sum, after payment of legacy duty, of about £11,500.

UNIVERSITY OF CAMBRIDGE.—Dr. A. W. Ward, Master of Peterhouse, has been elected a member of the council of the Senate.—Professor A. Macalister has been appointed an elector to the chair of Chemistry, Professor Newton an elector to the chair of Anatomy, Professor R. Liveing an elector to the Downing chair of Medicine, Dr. F. Darwin an elector to the chair of Zoology and Comparative Anatomy, Dr. Pye-Smith an elector to the chair of Physiology, Dr. D. MacAlister an elector to the chairs of Surgery and of Agriculture, and Professor Allbutt an elector to the chair of Pathology.—Mr. Clinton T. Dent has been appointed an Examiner in Surgery in the place of Professor Chiene, resigned.—Caius College will elect to a Shuttleworth Scholarship in Botany and Comparative Anatomy, value £55 per annum for three years, next March. Candidates must be medical students of the University of at least eight terms' standing. Applications are to be sent to the senior tutor before March 2nd.—At the congregation on Feb. 14th, Mr. E. S. Verdon, M.A., M.B. Cantab., was admitted to the degree of M.D. *in absentiâ*. Dr. Verdon is resident at the Court of Morocco.

LEICESTER BOROUGH ASYLUM: OPENING OF NEW BUILDINGS.—On Feb. 8th the extensive new buildings of the Leicester Borough Asylum, which, exclusive of the land, have been erected and furnished at a cost of £94,743, were formally opened. The extension, which is to the east of the old buildings and comprises a complete asylum for males, provides accommodation for 335 patients. The total number of beds now provided in the whole institution is 855, which is greatly in excess of the present requirements of the borough. In the meantime the surplus accommodation will be used by outside patients and will, it is hoped, prove to be a source of revenue to the institution. From an exterior point of view the new extension presents no striking features, the severe red brick being relieved by a dressing of stone only. The wards have been arranged in blocks in echelon, but as a continuous building, with a main corridor in the rear, giving a separate approach to each ward. The formation of the site, which slopes considerably to the south, made this arrangement necessary, and as a result the whole of the wards face the south and receive much more sunshine than would otherwise be the case. The wards have a bright and cheery appearance and are lofty, well lighted, well ventilated, and comfortably furnished. The recreation hall, in which a weekly entertainment will be given to the inmates, is a very fine building with a stage at one end and dressing and property rooms and other accessories for theatrical performances. The administrative buildings have been excellently arranged and include a spacious and handsome committee-room. The whole of the buildings are heated by steam on the most approved principle and electrically lighted throughout, the total cost of the installation for the latter being no less than £4000. The buildings are also fitted with fire-alarms, and by a most ingenious tell-tale clock the superintendent will be able to

see at what hour the wards and dormitories are visited by the attendants, each visit being automatically registered by the clock. The plans for the extension were prepared by Mr. Hine of London, consulting architect to His Majesty's Commissioners in Lunacy, and Messrs. Moss and Sons, Limited, of Loughborough, secured the building contract, the work being commenced in the autumn of 1897. The old asylum, with its administrative block, was built to accommodate between 300 and 400 patients, and that the institution has not been extended much too soon is evidenced by the fact that the number of patients is now no less than 576. The opening ceremony was performed by Alderman Dr. Clifton, the chairman of the asylum committee, in the presence of the mayor and corporation and representatives of the local public bodies.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, Charing-cross-road, London.
Helwân and the Egyptian Desert. By W. Page May, M.D., B.Sc., M.R.C.P. Price 3s.

BAILLIÈRE ET FILS, Paris.
L'Avortement. By P. Brouardel. Price 7 francs 50 cents.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, and Henrietta-street, Strand, London.
The Asphyxial Factor in Anæsthesia, and other Essays. By H. Bellamy Gardner, M.R.C.S. Eng., L.R.C.P. Lond. Price 3s. net.
Mock-Nurses of the Latest Fashion, A.D. 1901. By F. J. Gant, F.R.C.S. Second edition. Price 3s. 6d. net.
The Practical Guide to the Public Health Acts. By T. W. Hime, B.A., M.D. Second edition. Price 15s. net.
Physical Diagnosis of Diseases of the Chest. By Richard C. Cabot, M.D. Price 10s. 6d. net.

BAUERMEISTER, Glasgow.
Grenzfragen des Nerven- und Seelenlebens. VI.-VII.: Über Wahnideen im Völkerleben. By Dr. M. Friedmann. Price 2s. 3d. VIII.: Über den Traum. By Dr. Sigm. Freud. Price 1s. 3d.
Atlas der Nasenkrankheiten. Lieferungen Dritte und Vierte. Price 6s. each.

CASSELL AND CO., London.
Difficult Labour. By G. Ernest Herman, M.B. Lond., L.R.C.P. New and revised edition. Price 12s. 6d.

CHURCHILL, J. & A., Great Marlborough-street, London.
Diet and Food Considered in Relation to Strength and Power of Endurance, Training, and Athletics. By Alexander Haig, M.D. Oxon., F.R.C.P. Third edition. Price 2s.

DAVIS COMPANY, Philadelphia, New York, and Chicago.
A Practical Treatise on Materia Medica and Therapeutics. By John V. Shoemaker, M.D., LL.D. Fifth edition. Price 16s. net.

FOWLER AND CO., Imperial-arcade, Ludgate-circus, London.
Perfect Health: How to Get It and How to Keep It. By One Who Has It. Price 2s. 6d. net.

GEORGI, ARTHUR, Leipsic.
Die Therapie beim engen Becken. By Dr. B. Krönig.

HUTCHINSON AND CO., Paternoster-row, London.
Disciples of Æsculapius. By Sir Benjamin Ward Richardson, M.D. F.R.S. With a Life of the Author by his Daughter, Mrs. George Martin. In two volumes. Price 36s.

KIMPTON, HENRY, Furnival-street, London.
A Manual of Otology. By Gorham Bacon, A.B., M.D. With an Introductory Chapter by Clarence John Blake, M.D. Second edition, revised and enlarged. Price 10s. 6d. net.
A Treatise on Mental Diseases. By Henry J. Berkley, M.D. Price 21s. net.
A Practical Treatise on Medical Diagnosis. By John H. Musser, M.D. Fourth edition, revised and enlarged. Price 28s. net.
A Practical Treatise on Genito-Urinary and Venereal Disease and Syphilis. By Robert W. Taylor, A.M., M.D. Second edition, thoroughly revised. Price 25s. net.

LEHMANN, J. F., München.
Atlas und Grundriss der Pathologischen Anatomie. II. Band. Harnapparat, Geschlechtsorgane, Nervensystem, Knochen, Gelenke. By Dr. O. Bollinger. Price 12 marks.
Atlas und Grundriss der Speciellen Pathologischen Histologie. II. Band. Leber, Harnorgane, Geschlechtsorgane, Nervensystem, Haut, Muskeln, Knochen. By Dr. Hermann Dürck. Price 14 marks.
Atlas und Grundriss der Traumatischen Frakturen und Luxationen. By Dr. H. Helferich. Price 12 marks.
Atlas und Grundriss der Orthopädischen Chirurgie für Studierende und Aerzte. By Dr. A. Lüning und Dr. W. Schulthess. Price 16 marks.

LIPPINCOTT COMPANY, London and Philadelphia.
Photographic Atlas of the Diseases of the Skin. Parts I., II., and III. By George Henry Fox, A.M., M.D. Price 6s. each part net.

MALOINE, Rue de l'École de Médecine, Paris.
La Surdi-Mutité. By Etienne Saint-Hilaire.

MURRAY, JOHN, Albemarle-street, London.
Comparative Physiology of the Brain and Comparative Psychology. By Jacques Loeb, M.D. Price 6s.

NEW SYDENHAM SOCIETY, London.
The Fundamental Data of Modern Pathology: History, Criticisms, Comparisons, Applications. By Dr. Achille Monti. Translated by John Joseph Eyre, M.R.C.P., L.R.C.S.I., D.P.H. Camb.

PUTNAM'S SONS, London and New York.
The Laws of Scientific Hand-reading: a Practical Treatise on the Art commonly called Palmistry. By William G. Benham. Price 12s.

REBMAN, LIMITED, Shaftesbury-avenue, London.
A Dictionary of Medicine and the Allied Sciences. By Alexander Duane, M.D. Third edition, enlarged and revised. Price 14s. net.
Normal Histology. By Edward K. Dunham, Ph.B., M.D. Second edition. Price 12s. net.
The Practice of Medicine. By James Tyson, M.D. Second edition. Price 24s. net.
Laryngeal Phthisis; or, Consumption of the Throat. By Richard Lake, F.R.C.S. Price 7s. 6d. net.

SAUNDERS, W. B., AND CO., Strand, London, and Philadelphia.
The International Text-book of Surgery, by American and British Authors. Edited by J. Collins Warren, M.D., LL.D., and A. Pearce Gould, M.S., F.R.C.S. In two volumes. Price 42s. net.
The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D. Price 19s. net.
A Text-book of Obstetrics. By Barton Cooke Hirst, M.D. Second edition. Price 21s. net.
A Text-book of the Diseases of the Nose and Throat. By D. Braden Kyle, M.D. Second edition. Price 17s. net.
Atlas and Epitome of Special Pathologic Histology. By Dr. Hermann Dürck. Edited by Dr. Ludvig Hektoen. Price 13s. net.
A Text-book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D. Fourth edition, revised. Price 24s. net.

SCIENTIFIC PRESS, LIMITED, Southampton-street, Strand, London.
The Nursing Profession: How and Where to Train. By Sir Henry Burdett, K.C.B. Price 2s. net.

SIMPKIN, MARSHALL, AND CO., London.
Practical Household Cookery Recipes. By A. M. Westcott, L.C.A. Price 1s. net.

URBAN AND SCHWARZENBERG, Berlin and Wien.
Functionelle Nierendiagnostik, mit besonderer Berücksichtigung der Nierenchirurgie. By Dr. Leopold Casper and Dr. Paul Friedrich Richter. Price 4 marks.

VIRTUE AND CO., Ivy-lane, London.
The Convalescent's Diet: How to Provide and Prepare It. By Lucy Helen Yates. Price 1s.

VOGEL, F. C. W., Leipsic.
Lehrbuch der Physiologie des Menschen. Erster Band. Sinne, Nerven, Muskeln, Fortpflanzung in Achtundzwanzig Vorträgen. By G. von Bunge. Price 10 marks.

WILLIAMS AND NORGATE, London, Edinburgh, and Oxford.
A Topographical Atlas of the Spinal Cord. By Alexander Bruce, M.A., M.D., F.R.C.P.E., F.R.S.E. Price 42s. net.

WILSON, EFFINGHAM, Royal Exchange, London.
Cordingley's Guide to the Stock Exchange. By W. G. Cordingley. Price 2s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ANNIS, E. G., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health for the Borough of Huddersfield.

ATHOMAS, G., M.B., M.C., has been re-appointed Ophthalmic Surgeon to the Oldham Infirmary, and has also been re-appointed Ophthalmic Surgeon to the Workhouse Infirmary, Oldham.

AWDRY, WALTER ROBERT, M.B. Durh., M.R.C.S., has been appointed Honorary Surgeon to the Berkeley (Gloucestershire) Hospital.

BATTEN, RAYMOND WINTERBOTHAM, M.D., F.R.C.P. Lond., M.R.C.S., J.P., has been appointed Consulting Physician to the Berkeley (Gloucestershire) Hospital.

BEACHCROFT, F. S., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Petworth District of Sussex.

BRODRICK, CHARLES CUMBERLAND, L.R.C.P., L.R.C.S., L.M. Edin., has been re-appointed Medical Officer and Public Vaccinator for the Whitchurch and South Lydford Districts of the Tavistock Union.

BROWN, R. K., M.B., B.Ch. Irel., D.P.H., has been appointed Medical Officer of Health for the Borough of Bermondsey.

BROWN, WARBURTON, L.R.C.P., M.R.C.S., L.D.S., has been appointed Junior Dental Surgeon to the Seamen's Hospital Society, Greenwich, S.E.

CAMMIDGE, P. J., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Bacteriologist on the staff of the County Medical Officer for the West Riding of Yorkshire.

COLE-BAKER, LYSTER, B.A. Dub., M.D., B.Ch., has been appointed Honorary Assistant Physician to the Royal Portsmouth Hospital.

COMPTON, M. W., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Keyingham District of the East Riding of York.

CROCKER, J. HEDLEY, M.D. Vict., D.P.H., has been appointed Medical Officer of Health of Richmond, Surrey.

DINGWALL, A., M.B., Ch.M. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Presteigne District of the County of Radnor.

DUCKWORTH, SIR DYCE, M.D., F.R.C.P. Lond., has been appointed Consulting Physician to the Italian Hospital, Queen-square, London.

ELDER, GEORGE, M.D. Glasg., has been appointed Consulting Surgeon to the Samaritan Hospital for Women, Nottingham.

ENSOR, C. A., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Tisbury District of Wilts.

FLETCHER, JAMES, M.B., C.M. Aberd., D.P.H., has been appointed Resident Medical Officer to the City Fever Hospital, Ham Green, near Bristol, vice F. P. Mackie, resigned.

FORD, ROSA, M.B. Lond., has been appointed Resident Medical Officer to the York Dispensary.

FOWLER, R. G., M.R.C.S., L.R.C.P., has been appointed House Physician at the Leeds General Infirmary.

GOADBY, KENNETH W., M.R.C.S., L.R.C.P., L.D.S. Eng., has been appointed Senior Dental Surgeon to the Seamen's Hospitals, London.

HANDLEY, W. SAMPSON, M.S., M.D. Lond., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at the Samaritan Free Hospital for Women and Children, Marylebone-road, N.W.

HODGSON, J. F., M.B., Ch.B. Vict., has been appointed, Senior House Surgeon to the Oldham Infirmary.

JOHNSTON, L. A. W., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Medical Officer to the City Fever Hospital, Lodge-road, Birmingham.

SCOTT, D. WOLSELEY, L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Medical Officer to the Hendreforgan and other collieries, Guys, near Swansea.

SOUTH, P. C., M.D. Glasg., D.P.H. Camb., has been re-appointed Medical Officer of Health for the Borough of Wandsworth.

STENHOUSE, J. W., M.B., C.M. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon-in-ordinary to Henshaw's Blind Asylum, Old Trafford.

WILLIAMS, THOS., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Masham District of the North Riding of York.

WORGER, RICHARD GEORGE, L.R.C.P. Lond., L.S.A., M.R.C.S., has been appointed Medical Officer for the Kilmersdon District of the Frome Union, vice T. H. Worger, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House Surgeon. Salary £65 per annum. Also Junior House Surgeon. Salary £60 per annum, with board, lodgings, and attendance.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary £60, with board, washing, and attendance.

BOROUGH HOSPITAL, BIRKENHEAD.—Senior and also Junior Resident House Surgeon. Salary £100 and £80 respectively per annum, with board and washing.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Two House Surgeons. Salary £160 per annum, with coals, gas, apartments, washing, and attendance.

BRISTOL ROYAL INFIRMARY.—Resident Obstetric Officer. Salary £40 per annum, with board, lodging, and washing.

COUNTY ASYLUM, Whittingham, Lancashire.—Senior Assistant Medical Officer. Salary £225 per annum, rising to £250 at the end of 12 months, with board, lodging, washing, and attendance.

DISTRICT INFIRMARY, Ashton-under-Lyne.—House Surgeon. Salary £100 a year and board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Board, residence, &c., and honorarium of £25 after completion of six months' approved service. Also Casualty Medical Officer for six months, renewable. Salary at the rate of £100 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Junior Resident Medical Officer and Registrar. Salary £50, with board and washing.

GUILDFORD, GODALMING, AND WOKING JOINT HOSPITAL BOARD.—Medical Officer for the Isolation Hospital at Woodbridge, Guildford. Salary £175 per annum.

GUILDFORD RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary £250 per annum, which will include travelling and all other expenses.

HEIGHAM HALL ASYLUM, Norwich.—Assistant Medical Officer.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Two House Physicians, unmarried, for six months and nine months respectively. Salary £20, with board and residence in the hospital.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £40, with board and lodging.

ISLANDS OF SANDAY AND NORTH RONALDSHAY.—Resident Medical Officer. Salary £20 per annum, with dwelling-house, offices, garden, and ten acres of ground, subject to annual rent of £22.

KENT COUNTY ASYLUM, Barming Heath, Maidstone.—Fourth Assistant Medical Officer and Pathologist. Salary £175 per annum (rising £5 a year), with furnished quarters, attendance, coal, gas, garden produce, and washing.

KING'S COLLEGE, LONDON.—Sambrook Surgical Registrarship (open to King's College students only).

LAMBETH INFIRMARY, Brook-street, Kennington-road, S.E.—Second Assistant Medical Officer for six months. Salary at the rate of £80 per annum, with board, lodging, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—House Surgeon. Salary £85 per annum, with board and lodging.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80 per annum, with board, residence, and washing.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Cheetham Hill-road.—Honorary Physician for Diseases of Children.

METROPOLITAN BOROUGH OF BERMONDSEY.—Analyst.

NORTH RIDING ASYLUM, Clifton, York.—Assistant Medical Officer, not more than 30 years of age. Salary commencing at £125, rising to £175, and £10 in lieu of liquor, with board, lodging, washing, and attendance.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £100, with board, lodging, and washing. Also Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

OWENS COLLEGE, Manchester.—Junior Assistant to the Professor of Obstetrics and Gynæcology.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, Brighton.—House Surgeon. Salary £80, with board, lodging, and washing.

ROYAL PIMLICO DISPENSARY, Buckingham Palace-road.—Resident Medical Officer and Secretary. Salary £100 and house.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer. Salary £105 per year, with residence and attendance.

SALFORD ROYAL HOSPITAL.—House Surgeon, salary £100 per annum; also House Physician, salary £80 per annum; also Junior House Surgeon, salary £70 per annum, with board and residence in each case.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, lodging, and washing, with an advance of £10 for the second and third years.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Rawtenstall, in the County of Lancaster, and at Kirkpatrick Durham, in the County of Kirkcudbright.

TOWNSHIP OF MANCHESTER.—Visiting Surgeon for Workhouse Infirmary at Crumpsall. Salary £160 per annum.

WARNEFORD ASYLUM, Oxford.—Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior Resident House Surgeon, unmarried. Salary £120 per annum, with furnished residence and board.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodgings, washing, and attendance.

WEST KENT GENERAL HOSPITAL, Maidstone.—Honorary Surgeon.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium at the rate of £75 per annum and board, lodging, and washing.

WOOLWICH INFIRMARY.—Assistant Medical Officer (single, not over 30 years of age). Salary £150 per annum, with apartments, rations, and washing.

YORK COUNTY HOSPITAL.—Resident Assistant House Surgeon. Salary £60 per annum, with board, attendance and washing.

Births, Marriages, and Deaths.

BIRTHS.

HEWLETT.—On Feb. 7th, at Lyddon House, Southfields, S.W., the wife of R. Tanner Hewlett, M.D., M.R.C.P., of a son.

KENT.—On Feb. 11th, at Holland House, Paignton, S. Devon, the wife of R. T. Kent, M.A. Oxon., F.R.C.S., of a son.

REID.—On Feb. 5th, at Broc Hill, Milford, Stafford, the wife of George Reid, M.D., of a son.

VOELCKER.—On Feb. 9th, at Harley-street, the wife of Arthur Francis Voelcker, M.D., F.R.C.P., of a son.

MARRIAGES.

ROBERTSON—HOLL.—On Jan. 31st, at St. Alban's, Acton-green, by the Rev. Bernard Spink, W. J. Robertson, M.R.C.S. Eng., L.R.C.P. Lond., eldest son of W. Robertson, M.D., of Glanton House, Northumberland, to Theodora, eldest daughter of W. J. Holloway, Esq., of Mia Gunyah, Bedford Park, W. No cards.

TALBOT—GIBSON.—On Feb. 6th, at St. George's, Bloomsbury, Alfred George Talbot, M.B., M.S. Edin., of Richmond, Nelson, New Zealand, to Beatrice Esther, second daughter of Frederick Denhame Gibson of Christchurch, New Zealand.

WHITE—MÉGRET.—On Feb. 12th, at the Roxburghe Hotel, Edinburgh, T. B. White, M.B. Edin., Moffat, to Constance, daughter of Adolphe Mégret, No. 68, Rue de Grenelle, Paris.

DEATHS.

BARNETT.—On Feb. 6th, at The Brook House, Leominster, Herefordshire, Samuel Barnett, M.R.C.S., J.P., aged 80 years.

BAYLEY.—On Jan. 12th, at Johannesburg, Richard King Bayley, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., second son of W. H. Bayley, solicitor, Basingstoke, aged 30 years.

CULBARD.—On Feb. 9th, at Dunkeld, John C. Culbard, M.D., M.R.C.S.

JONES.—On Feb. 11th, at Sheep-street, Northampton, Arthur Henry Jones, M.D. Lond. aged 48 years.

RUGG.—On Monday, Feb. 11th, at Avenue Lodge, Wood Green, Baron Alfred Rugg, L.R.C.P. Lond., M.R.C.S., aged 53 years.

SCRATCHLEY.—On Feb. 6th, at Pelham House, Poole, Dorset, Henry William Scratchley, L.R.C.P., M.R.C.S., aged 38 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE FEES OF A MEDICAL WITNESS.

MR. JUSTICE RIDLEY allowed himself to speak in terms almost of stricture because a consultant medical man demanded 20 guineas for giving medical evidence. The witness explained that to attend the court was a serious inconvenience, and that evidence might well have been given by a practitioner whose time was, perhaps, not so valuable. Mr. Justice Ridley would find it difficult to explain why, in these circumstances, there was anything extortionate or even inconsiderate in the price fixed by the medical witness for his services. Practising barristers could tell his lordship stories of the fees demanded and exacted by experts in other provinces of art and science that would make the 20 guineas asked by the medical expert seem boundlessly moderate.

MEDICAL SUPERSTITIONS.

To the Editors of THE LANCET.

SIRS,—Could you or any of your readers recommend me a book to refer to for a popular lecture on medical superstitions? Thanking you in anticipation, I am, Sirs, yours faithfully,

Feb. 11th, 1901. M.B. LOND.

**** We take it that our correspondent requires literature on superstitions connected with medicine. Almost any book on folk-lore will give him information on the subject—e.g., Henderson's "Folk Lore of the Northern Counties of England." Gould's "Anomalies and Curiosities of Medicine" will also help him, and a mine of wealth as to drugs and the medicinal properties of animals is to be found in "The History of Four-footed Beasts," by Topsell, a sixteenth-century writer. If our correspondent has time he might study the works of Sir Thomas Browne and Sir Kenelm Digby. Anti-vaccination literature will also be found fruitful, especially in its early days when it was stated that any child who was vaccinated developed horns and a tail. Perhaps some of our readers can suggest other works of reference.—ED. L.

A MISTAKE SOMEWHERE?

To the Editors of THE LANCET.

SIRS,—Surely the report of Lord Lister's speech at the York-road, Lambeth, Hospital as it appeared in the *Standard* cannot be correct. Speaking of certified midwives, he is credited with these words in *oratio obliqua*: "The inmates of that institution are far better off than the middle classes who had to trust to the 'general practitioner,' who hitherto had not, on the average, been persuaded of the enormous importance of antiseptic precautions."

I am, Sirs, yours faithfully,

Feb. 6th, 1901. H. W.

LANTERN SLIDES FOR THE PASSION PLAY.

To the Editors of THE LANCET.

SIRS,—Your correspondent "G. P.," who asks in THE LANCET of Feb. 9th, p. 444, where he can obtain slides, &c., for a lecture on the Oberammergau Passion Play, can purchase a lecture and hire slides from E. G. Wood, 1 and 2, Queen-street, Cheapside, E.C. The slides, however, illustrate only the performance of 1890, not that of 1900; slides of the latter are very expensive.

I am, Sirs, yours faithfully,

Feb 8th, 1901. J. W. C.

"CHRONIC DIARRHŒA: SUGGESTIONS FOR TREATMENT DESIRED."

To the Editors of THE LANCET.

SIRS,—In reply to "Perplexed" the chronic diarrhœa may be due to want of complete evacuation of the bowels in an aged person. I suggest enemata of warm injections with oil and some turpentine twice or thrice a week. The diarrhœa may yield to the following: one and a half ounces of sulphate of magnesia and one ounce of sulphate of soda; mix, take a teaspoonful in half a tumbler of hot water every morning before breakfast. It might be well to explore the rectum.

I am, Sirs, yours faithfully,

Jan. 29th, 1901. LIEUTENANT-COLONEL, R.A.M.C.

H. M. W., D. writes:—I should be glad of suggestions as to cause and treatment in the following case. The patient, a lady, married, aged 40 years, no children, suffers from what she well describes as uncontrollable fidgets. The attacks come on every evening with more or less severity; the disturbance is in the lower limbs only and begins with pain and tingling; she is quite unable to keep the limbs quiet or sit still; the condition passes off during the night. The trouble has existed for some years, but is becoming much worse and is a source of distress to herself and friends. A sister and brother deceased were affected in the same way. The condition causes insomnia. The patient leads an active life, takes much exercise, and has good digestion. There is chronic constipation, which at one time occasioned a serious obstruction; there are slight varicose veins and many dilated venules on the legs. The slightest injury produces extensive ecchymosis. Is the condition due to toxic or mechanical effects of constipation? It is not relieved by ordinary laxatives. Or is it a nervous condition and beyond treatment?

Dr. H. J. Gardiner.—The question of medical certificates for a school board is a thorny one. For various points connected with the subject we would refer our correspondent to THE LANCET, vol. ii., 1896, pp. 48, 165, *et seq.*; to vol. i., 1896, pp. 1511, 1808, 1823; to vol ii., 1896, pp. 259, 330, *et seq.*; and to vol. i., 1897, p. 331. The chief points to be noted are these. A school board has no right to demand a medical certificate, but it has a right and a duty to see that children attend school. If the parents or guardians of the children cannot show a reasonable excuse the board can summon them and the magistrate can demand a certificate. The medical man can, if he likes, give a certificate gratis, or he may prefer to attend the police-court and give evidence on behalf of the child.

A. R. perceives, as no one can help perceiving, the possible awkwardness of the position. We strongly advise him to avoid the appearance of connexion with an unqualified dentist that must follow upon the use of a common room on the same premises. No enalty can follow if he can prove that he has clean hands, but why incur the chance of a complaint being made to the General Medical Council?

J. H. H.—1. In our opinion the whole club should subscribe for a medical man. The fact that many of the members belong to other clubs does not free them from the obligation of helping to support a medical man for the benefit of their fellow-members who do not belong to other clubs. 2. Not less than 1½d. per head per week.

Enquirer.—We have never heard of "Zox" powders. From the label it would seem that they are ordinary quack remedies advertised to cure all sorts of things of different origin. A specimen of the powders can be sent for analysis. 2. We do not know what "Tatcho" is or what claims are made for it in the advertisements.

Lusos.—The graduate in question may be somewhat improperly described in the paper. But there is no reason to suppose that he wrote the paragraph himself, and the editor of a lay journal cannot be asked to observe the minutiæ of medical titles. Who, then, are we invited to put the blame upon?

M.R.C.S. (1).—The communication is founded upon a misreading of our article.

M.R.C.S. (2).—We will endeavour to be of assistance.

G. A. F. should disregard the matter entirely.

Ward should consult his medical man.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (18th).—SOCIETY OF ARTS.—8 P.M. Mr. W. J. Pope: The Bearings of Geometry on the Chemistry of Fermentation. (Cantor Lecture.)

TUESDAY (19th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Dr. W. P. Herringham: On the Condition of the Renal Arterioles in Cases of Chronic Renal Disease (lantern demonstration).—Dr. A. G. Auld: Additional Remarks on the Toxins of the Pneumococcus.—Mr. R. Johnson: Congenital Atresia of the Vesical Orifice in One Ureter with Prolapse of its Dilated Extremity through the Urethra.—Dr. W. C. Bosanquet: Multiple Inflammation of Serous Membranes in Children. Card Specimens:—Mr. C. Keep: Pyronephrosis.—Mr. Drew: Double Renal Calculus.
CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, Sloane-square, S.W.).—8.30 P.M. Papers:—Mr. F. C. Abbott: Spinal Curvature and Physical Exercises (with demonstration).—Dr. C. J. Harrison: Acute Rheumatism of Childhood.

WEDNESDAY (20th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—7.30 P.M. Mr. C. Beck: Exhibition of Bacteria and Blood Parasites.

THURSDAY (21st).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Clinical Evening.
CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Exhibition of Clinical Cases followed by discussion. Patients will be in attendance from 8 P.M. to 9 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. J. Pringle: Consultation. (Skin.)
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. W. Edmunds: The Pathology and Diseases of the Thyroid Gland. (Erasmus Wilson Lecture.)
ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Mr. A. Willey: The Origin of Vertebrate Animals.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Moullin: Gynæcological Cases.

TUESDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Consultation. (Medical).

WEDNESDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Clinical Lecture:—Sir J. B. Tuke: Insanity a Symptom of Organic Disease.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. W. Edmunds: The Pathology and Diseases of the Thyroid Gland. (Erasmus Wilson Lecture.)
LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—5 P.M. Dr. F. Potter: Hoarseness and Aphonia. (Post-graduate Course.)
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—3 P.M. Dr. Fowler: The Treatment of Cardiac Failure in Aortic Regurgitation.

THURSDAY (21st).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Dr. D. Grant: Treatment of Nervous Disorders of the Pharynx and Larynx.
CHARING-CROSS HOSPITAL.—4 P.M. Dr. A. Routh: Gynæcological Demonstration. (Post-graduate Course.)
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—3 P.M. Dr. H. Low: Class. Roentgen Rays. 4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. F. E. Batten: Cerebral Diplegias in Children.
THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration:—Dr. P. S. Abraham.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. C. B. Keetley: Surgery of the Joints.

FRIDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Ear.)
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. W. Edmunds: The Pathology and Diseases of the Thyroid Gland. (Erasmus Wilson Lecture.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1900, bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 14th, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Feb. 8	30·30	W.	...	49	43	35	35	36	Foggy
,, 9	30·34	W.	...	50	43	26	39	40	Foggy
,, 10	30·39	W.	...	52	42	39	40	42	Cloudy
,, 11	30·28	N.E.	...	49	40	39	38	39	Overcast
,, 12	30·25	NNW	...	61	40	28	28	30	Fine
,, 13	30·19	N.	...	47	38	30	33	35	Overcast
,, 14	30·48	S.	...	52	33	25	Fzn.	27	Foggy

During the week marked copies of the following newspapers have been received:—*West Hartlepool Guardian, Newcastle Daily Chronicle, North Star (Darlington), Leeds Mercury, Birmingham Daily Gazette, Dundee Advertiser, Bradford Observer, Yorkshire Post, Alliance News (Manchester), Vegetarian, Glasgow Herald, Manchester Guardian, Morning News (Plymouth), Scotsman, Liverpool Daily Post, Bristol Mercury, Times of India, Pioneer Mail, Herald of Wales, Citizen, Spalding Press, Surrey Comet, Builder, Architect, Evesham Standard, Hertfordshire Mercury, Mining Journal, Reading Mercury, City Press, Local Government Chronicle, Daily Express, Sanitary Record, Plumber and Decorator, Brighton Times, Railway Herald, Western Advertiser (Yeovil), Hastings and St. Leonards News, Surrey Advertiser, Local Government Journal, The Welshman, Middlesbrough Daily Gazette, Sussex Courier, Derby Express, Cornish Echo, Western Daily Mercury, West London Observer, Waterloo Herald, Worthing Observer, Dunfermline Journal, Perth Constitution, Christian World, &c., &c.*

Communications, Letters, &c., have been received from—

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B.—Dr. J. Burnet, Edinburgh; Messrs. Burroughs, Wellcome, and Co., Lond.; Bristol Royal Infirmary, Secretary of; British Medical Association, Lond.; Mr. F. D. N. Brown, Swanage; Messrs. Battley and Watts, Lond.; B. and M.; Dr. G. Brown, Colchester; Mr. H. R. Beale, Lond.; Dr. G. W. Bannatyne, Bath.

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